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ABSTRACT

This report from the United States Surgeon General is the result of a review of the scientific literature and analyses of new data relating to youth violence. It identifies and quantifies factors, in particular settings of combinations, that increase the probability that violence will occur. It also presents an array of interventions of well-documented effectiveness in helping young people whose lives are already marked by a propensity for violence as well as in preventing others from viewing violence as a solution to needs, wants, or problems. This report is divided into six chapters. The first serves as an introduction and offers chapter conclusions for chapters two through five. Those chapters discuss the magnitude of youth violence; the developmental dynamics of youth violence; risk factors for youth violence; and prevention and intervention. The final chapter examines a vision for the future. Each chapter includes a list of references. The executive summary of this report is included in a separate booklet. (Contains an index.) (MKA)

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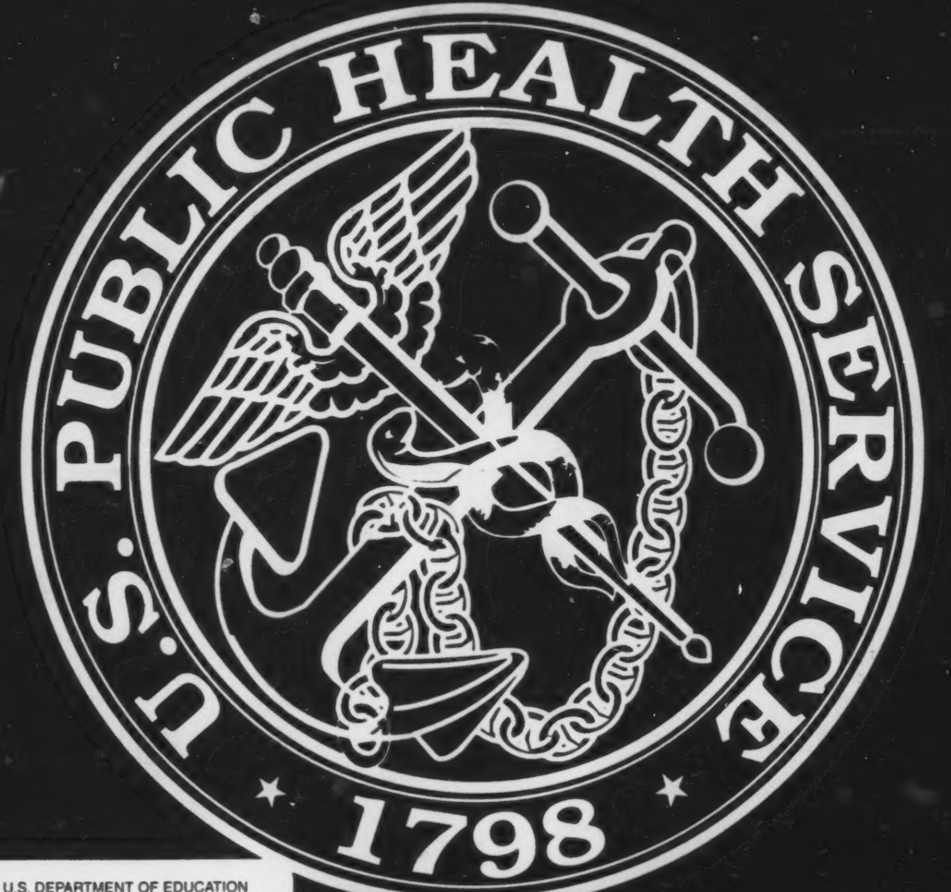

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Department of Health and Human Services

YOUTH VIOLENCE

A REPORT OF THE SURGEON GENERAL

DEPARTMENT OF HEALTH AND HUMAN SERVICES
U.S. Public Health Service

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Message from Donna E. Shalala

Secretary of Health and Human Services

The first, most enduring responsibility of any society is to ensure the health and well-being of its children. It is a responsibility to which multiple programs of the Department of Health and Human Services are dedicated and an arena in which we can claim many remarkable successes in recent years. From new initiatives in child health insurance and Head Start, to innovative approaches to child care, to the investment in medical research that has ameliorated and even eliminated the threat of many once lethal childhood diseases, we have focused directly and constructively on the needs of millions of children. Through programs designed to enhance the strength and resiliency of families and family members across the life span and through our investments in diverse community resources, we are also helping to enhance the lives and enrich the opportunities of millions more of our children.

Although we can take rightful pride in our accomplishments on behalf of U.S. youths, we can and must do more. The world remains a threatening, often dangerous place for children and youths. And in our country today, the greatest threat to the lives of children and adolescents is not disease or starvation or abandonment, but the terrible reality of violence.

We certainly do not know all of the factors that have contributed to creating what many citizens—young and old alike—view as our culture of violence. It is clear, however, that as widespread as the propensity for and tolerance of violence is throughout our society—and despite efforts that, since 1994, have achieved dramatic declines in official records of violence on the part of young people—every citizen must assume a measure of responsibility for helping to reduce and prevent youth violence. Information is a powerful tool, and this Surgeon General's report is an authoritative source of information.

In directing the Surgeon General to prepare a scholarly report that would summarize what research can tell us about the magnitude, causes, and prevention of youth violence, President Clinton sought a public health perspective on the problem to complement the extraordinary work and achievements in this area that continue to be realized through the efforts of our criminal and juvenile justice systems. Over the past several months, the Department of Health and Human Services has worked with many hundreds of dedicated researchers, analysts, and policy makers whose interests and expertise lie outside the traditional domains of health and human services. What has become clear through our collaboration is that collectively we possess the tools and knowledge needed to throw safety lines to those young Americans who already have been swept up in the currents of violence and to strengthen the protective barriers that exist in the form of family, peers, teachers, and the countless others whose lives are dedicated to the futures of our children.

This Surgeon General's report seeks to focus on action steps that all Americans can take to help address the problem, and continue to build a legacy of health and safety for our young people and the Nation as a whole.

Foreword

The opportunity for three Federal agencies, each with a distinct public health mission, to collaborate in developing the Surgeon General's report on youth violence has been an invigorating and rewarding intellectual challenge. We and our respective staffs were pleased to find that the importance that we collectively assign to the topic of youth violence transcended any impediments to a true, shared effort. Obstacles that one might have anticipated—for example, difficulties in exchanging data and discussing concepts that emanate from many different scientific disciplines—proved to be surmountable. Indeed, many of the differences in perspective and scientific approach that distinguish the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the Substance Abuse and Mental Health Services Administration (SAMHSA), when combined, afforded us a much fuller appreciation of the problem and much firmer grounds for optimism that the problem can be solved than is obvious from within the boundaries, or confines, of a single organization.

The mission of CDC is to promote health and quality of life by preventing and controlling disease, injury, and disability. The NIH, of which the National Institute of Mental Health (NIMH) is one component, is responsible for generating new knowledge that will lead to better health for everyone. SAMHSA is charged with improving the quality and availability of prevention, treatment, and rehabilitation services in order to reduce illness, death, disability, and cost to society resulting from substance abuse and mental illnesses. Common to each of the agencies is an interest in preventing problems before they have a chance to impair the health of individuals, families, communities, or society in its entirety. Toward this end, CDC, NIH/NIMH, and SAMHSA each support major long-term research projects involving nationally representative samples of our Nation's youth. These studies, which are introduced and described in the report that follows, are designed both to monitor the health status of young Americans and to identify factors that can be shown to carry some likelihood of risk for jeopardizing health—information that lends itself to mounting effective interventions.

The designation of youth violence as a public health issue complements the more traditional status of the problem as a criminal justice concern. Here again, it has been satisfying for all of us in the public health sector to reach across professional and disciplinary boundaries to our colleagues in law, criminology, and justice and work to meld data that deepen our understanding of the patterns and nature of violence engaged in by young people throughout our country.

What has emerged with startling clarity from an exhaustive review of the scientific literature and from analyses of key new data sources is that we as a Nation have made laudable progress in gaining an understanding of the magnitude of the problem. We have made great strides in identifying and quantifying factors that, in particular settings or combinations, increase the probability that violence will occur. And we have developed an array of interventions of well-documented effectiveness in helping young people whose lives are already marked by a propensity for violence as well as in preventing others from viewing violence as a solution to needs, wants, or problems.

CDC, NIH/NIMH, and SAMHSA look forward to continuing collaborations, begun during the development of this report, that will extend further the abilities of policy makers, communities, families, and individuals to understand youth violence and how to prevent it.

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Preface

from the Surgeon General
U.S. Public Health Service

The immediate impetus for this Surgeon General's Report on Youth Violence was the Columbine High School tragedy that occurred in Colorado in April 1999, resulting in the deaths of 14 students, including 2 perpetrators, and a teacher. In the aftermath of that shocking event, both the Administration and Congress requested a report summarizing what research has revealed to us about youth violence, its causes, and its prevention.

Our review of the scientific literature supports the main conclusion of this report: that as a Nation, we possess knowledge and have translated that knowledge into programs that are unequivocally effective in preventing much serious youth violence. Lest this conclusion be considered understated or muted, it is important to realize that only a few years ago, substantial numbers of leading experts involved in the study and treatment of youth violence had come to a strikingly different conclusion. Many were convinced then that nothing could be done to stem a tide of serious youth violence that had erupted in the early 1980s. During the decade extending from 1983 to 1993, arrests of youths for serious violent offenses surged by 70 percent; more alarmingly, the number of young people who committed a homicide nearly tripled over the course of that deadly decade. In many quarters, dire predictions about trends in youth violence yielded to resignation; elsewhere, fear and concern prompted well-meaning officials and policy makers to grasp at any proposed solutions, often with little, if any, systematic attention to questions of the efficacy or effectiveness of those approaches.

Fortunately, the past two decades have also been distinguished by the sustained efforts of researchers, legislators, and citizens from all walks of life to understand and address the problem of youth violence. One seminal contribution to these efforts was an initiative taken by one of my predecessors, Surgeon General C. Everett Koop, to address violence as a public health issue; that is, to apply the science of public health to the treatment and prevention of violence. As evident throughout this report, that endorsement was key to encouraging multiple Federal, state, local, and private entities to invest wisely and consistently in research on many facets of youth violence and to translate the knowledge gained into an exciting variety of intervention programs.

Although much remains to be learned, we can be heartened by our accomplishments to date. For one, our careful analyses, together with those conducted by components of the justice system, have demonstrated the pervasiveness of youth violence in our society; no community is immune. In light of that evidence, it has been most encouraging to me to see that the citizens with whom I have interacted in hundreds of communities around the Nation want us to find answers that will help *all* of our youth. There is a powerful consensus that youth violence is, indeed, our Nation's problem, and not merely a problem of the cities, or of the isolated rural regions, or any single segment of our society.

Equally encouraging have been our findings that intervention strategies exist today that can be tailored to the needs of youths at every stage of development, from young childhood to late adolescence. There is no justification for pessimism about reaching young people who already may be involved in serious violence. Another critical bit of information from our analyses of the research literature is that all intervention programs are not equally suited to all children and youths. A strategy that may be effective for one age may be ineffective for older or younger children. Certain hastily adopted and implemented strategies may be ineffective—and even deleterious—for all children and youth.

Understanding that effectiveness varies underscored for us the importance of bridging the gap between science and practice. Only through rigorous research and thorough, repeated evaluations of programs as they operate in the real world will we be assured that we are using our resources wisely.

In presenting this Surgeon General's report, I wish to acknowledge our indebtedness to the many scientists who have persisted in their work in this difficult, often murky area and whose results we have scrutinized and drawn on. We are also immensely grateful to the countless parents, police officers, teachers, juvenile advocates, health and human service workers, and people in every walk of life who recognize the inestimable value of our Nation's youth and the importance of peace, security, and comity in their lives.

David Satcher, M.D., Ph.D.
Surgeon General

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YOUTH VIOLENCE

A REPORT OF THE SURGEON GENERAL

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CHAPTER 1

INTRODUCTION

The decade between 1983 and 1993 was marked by an unprecedented surge of violence, often lethal violence, among young people in the United States. For millions of youths and their families, a period of life that should have been distinguished by good health and great promise was instead marred by injuries, disability, and death (Cook & Laub, 1998). This epidemic of violence not only left lasting scars on victims, perpetrators, and their families and friends, it also wounded communities and, in ways not yet fully understood, the country as a whole.

Since 1993, the peak year of the epidemic, there have been some encouraging signs that youth violence is declining. Three important indicators of violent behavior—arrest records, victimization data, and hospital emergency room records—have shown significant downward trends nationally. These official records reveal only a small part of the picture, however.

A fourth key indicator of violence—confidential reports by youths themselves—reveals that the proportion of young people who acknowledge having committed serious, potentially lethal acts of physical violence has remained level since the peak of the epidemic. In 1999, for instance, there were 104,000 arrests of persons under age 18 for robbery, forcible rape, aggravated assault, or homicide (Snyder, 2000); of those arrests, 1,400 were for homicides perpetrated by adolescents (Snyder, 2000) and, occasionally, even younger children (Snyder & Sickmund, 1999). Yet in any given year in the late 1990s, at least 10 times as many youths reported that they had engaged in some form of violent behavior that could have seriously injured or killed another person.

The high prevalence of violent behavior reported by adolescents underscores the importance of this report at this time.

Americans cannot afford to become complacent. Even though youth violence is less lethal today than it was in 1993, the percentage of adolescents involved in violent behavior remains alarmingly high. The epidemic of lethal violence that swept the United States was fueled in large part by easy access to weapons, notably firearms—and youths' self-reports of violence indicate that the potential for a resurgence of lethal violence exists. Yet viewing homicide as a barometer of all youth violence can be quite misleading. Similarly, judging the success of violence prevention efforts solely on the basis of reductions in homicides can be unwise.

This report, the first Surgeon General's report on youth violence in the United States, summarizes an extensive body of research and seeks to clarify seemingly contradictory trends, such as the discrepancies noted above between official records of youth violence and young people's self-reports of violent behaviors. It describes research identifying and clarifying the factors that increase the risk, or statistical probability, that a young person will become violent, as well as studies that have begun to identify developmental pathways that may lead a young person into a violent lifestyle. The report also explores the less well developed research area of factors that seem to protect youths from viewing violence as an acceptable—or inevitable—way of approaching or responding to life events. Finally, the report reviews research on the effectiveness of specific strategies and programs designed to reduce and prevent youth violence.

As these topics suggest, the key to preventing a great deal of violence is understanding where and when it occurs, determining what causes it, and scientifically documenting which of many strategies for prevention and intervention are truly effective. This state-of-the-science report summarizes progress toward those goals.

The most important conclusion of the report is that the United States is well past the "nothing works" era with respect to reducing and preventing youth violence. Less than 10 years ago, many observers projected an inexorably rising tide of violence; the recent, marked reductions in arrests of young perpetrators and in victimization reports appear to belie those dire predictions. We possess the knowledge and tools needed to reduce or even prevent much of the most serious youth violence. Scientists from many disciplines, working in a variety of settings with public and private agencies, are generating needed information and putting it to use in designing, testing, and evaluating intervention programs.

The most urgent need now is a national resolve to confront the problem of youth violence systematically, using research-based approaches, and to correct damaging myths and stereotypes that interfere with the task at hand. This report is designed to help meet that need.

The report makes it clear that after years of effort and massive expenditures of public and private resources, the search for solutions to the problem of youth violence remains an enormous challenge (Lipton et al., 1975; Sechrest et al., 1979). Some traditional as well as seemingly innovative approaches to reducing and preventing youth violence have failed to deliver on their promise, and successful approaches are often eclipsed by random violent events such as the recent school shootings that have occurred in communities throughout the country.

Youth violence is a high-visibility, high-priority concern in every sector of U.S. society. We have come to understand that young people in every community are involved in violence, whether the community is a small town or central city, a neatly groomed suburb, or an isolated rural region. Although male adolescents, particularly those from minority groups, are disproportionately arrested for violent crimes, self-reports indicate that differences between minority and majority populations and between male and female adolescents may not be as large as arrest records indicate or conventional wisdom holds. Race/ethnicity, considered in isolation from other life circumstances, sheds little light on a given child's or adolescent's propensity for engaging in violence.

This chapter describes the scope and focus of the report and explains how the public health approach advances efforts to understand and prevent youth violence. Common myths about youth violence are presented and debunked. Uncorrected, these myths lead to misguided public policies, inefficient use of public and private resources, and loss of traction in efforts to address the problem. Documentation for the facts that counter these myths appears in later chapters. This chapter also lays out the scientific basis of the report—that is, the standards of evidence that research studies had to meet in order to be included in the report and the sources of data cited throughout. Final sections of this chapter preview subsequent chapters and list the report's major conclusions.

SCOPE, FOCUS, AND OVERARCHING THEMES

The mission of the Surgeon General is to protect and improve the public health of the Nation, and this report was developed within the responsibilities and spirit of that mission. The designation of youth violence as a public health concern is a recent development. As discussed below in greater detail, public health offers an approach to youth violence that focuses on prevention rather than consequences. It provides a framework for research and intervention that draws on the insights and strategies of diverse disciplines. Tapping into a rich but often fragmented knowledge base about risk factors, preventive interventions, and public education, the public health perspective calls for examining and reconciling what are frequently contradictory conclusions about youth violence.

Although the public health approach opens up a broad array of considerations, the focus of this initial report is the perpetration by juveniles of interpersonal physical assault that carries a significant risk of injury or death. As restrictive as it may at first appear, this focus draws on a wealth of research into individual, family, school, peer group, and community factors that are associated with serious violence in the second decade of life. This report defines serious violence as aggravated assault, robbery, rape, and homicide; hereafter, it refers simply to "violence" or "violent crime," thus avoiding repetitious use of the terms "serious violence" or "serious violent crime."

The report views violence from a developmental perspective. It examines the interactions of youths' personal characteristics and the social contexts in which they live—as well as the timing of those interactions—to understand why some young people become involved in violence and some do not. This perspective considers a range of risks over the life course, from prenatal factors to factors influencing whether patterns of violent behavior in adolescence will persist into adulthood. The developmental perspective has enabled scientists to identify two general onset trajectories of violence: one in which violent behaviors emerge before puberty, and one in which they appear after puberty. Of the two, the early-onset trajectory provides stronger evidence of a link between early childhood experiences and persistent, even lifelong involvement in violent behavior. The developmental perspective is important because it enables us to time interventions for the particular point or stage of life when they will have the greatest positive effect.

The young people on whom this report focuses are principally children and adolescents from about age 10 through high school. Research reviewed in Chapter 4 shows that although risk factors for violence vary by stage of development, most youth violence emerges during the second decade of life. Appropriate interventions before and—as is increasingly well documented—*during* this period have a good chance of redirecting violent young people toward healthy and constructive adult lives. The window of opportunity for effective interventions opens early and rarely, if ever, closes.

SECONDARY AREAS OF CONCERN

Many legitimate concerns and issues that are indisputably associated with violence by young people are not addressed in depth in this first report. Behavioral patterns marked by aggressiveness, antisocial behavior, verbal abuse, and externalizing (the acting out of feelings) are peripheral to the main focus of the report. These behaviors may include violent physical interactions, such as hitting, slapping, and fist-fighting, that can have significant consequences but generally present little likelihood of serious injury or death. Therefore, such behaviors will be discussed only to the extent that they can be considered risk factors for violence.

Research has shown that victims and offenders share many personal characteristics and that victimization and perpetration of violent behavior are often entwined. Nonetheless, this report does not focus on victims of violence perpetrated by young offenders. Rather, it blends offender-based research with traditional public health concepts of prevention and intervention in an effort to bridge the gap between criminology and the social and developmental sciences, on the one hand, and traditional public health approaches to youth violence, on the other.

The report does not address violence against intimate partners, except when such violence is committed by a young person. The plight of victims, many of whom are children and adolescents, is of the utmost importance, but a key element in helping victims of violence is understanding the perpetrators of violence. Particular categories of crime, such as dating violence and hate crimes (motivated by racist or homophobic attitudes, for example), are important manifestations of violence, including violence committed by youths, and they demand research and targeted interventions. The limited amount of research conducted in this area has focused on victims, so there is little scientific evidence about what distinguishes perpetrators of these specific types of crimes (see reviews by Bergman, 1992; Comstock, 1991; and D'Augelli & Dark, 1984).

Self-directed violence—that is, self-inflicted injury and suicide—is not covered either. In collaboration with other Federal health agencies, the Office of the Surgeon General developed a National Strategy for the Prevention of Suicide (U.S. Public Health Service, 1999). In directing national attention to suicide as a major, yet largely preventable public health problem, the Surgeon General is bringing together health professional organizations, educators, health care executives, and managed care clinical directors to discuss gaps in scientific knowledge that impede efforts to decrease the incidence of suicide among Americans of all ages. The vast majority of youth suicides occur in the context of mental disorders (Brent et al., 1988; Shaffer et al., 1996), a topic that was reviewed in depth in the Surgeon General's report on mental health (U.S. DHHS, 1999).

Finally, the report does not propose public policy to reduce or prevent youth violence. The purpose of this report, like others from U.S. Surgeons General, is to review and describe existing knowledge in order to provide a basis for action at all levels of society. The last chapter identifies potential courses of action, including specific areas in which research is needed, but suggesting whether and how such action will lend itself to policy development is beyond the purview of this report.

YOUTH VIOLENCE: THE PUBLIC HEALTH APPROACH

In October 1985, Surgeon General C. Everett Koop convened an unprecedented Workshop on Violence and Public Health (U.S. DHHS, 1986). The participants agreed strongly that it was time public health perspectives and expertise were brought to bear on questions of crime and violence. Throughout much of the last century, these questions had been dominated by the social sciences and the criminal justice system. For the most part, health care efforts were restricted to the rehabilitation of convicted offenders (Sechrest et al., 1979; U.S. DHHS, 1986). Dissatisfaction with both the timing and the outcomes of the "rehabilitation ideal" spurred the search for a more effective role for health care in addressing violence.

With its emphasis on prevention of disease or injury, the public health approach to violence offers an appealing alternative to an exclusive focus on rehabilitation. Primary prevention identifies behavioral, environmental, and biological risk factors associated with violence and takes steps to educate individuals and communities and protect them from these risks. Central to education and protection is the principle that health promotion is best learned, performed, and maintained when it is ingrained in individuals' and communities' daily routines and perceptions of what constitutes good health practices.

Public health practitioners and advocates have taken the lead in encouraging alliances and networks among academic disciplines, professions, organizations, and communities to make health concerns permanent public priorities and part of personal practices. In that tradition, participants at the 1985 Surgeon General's conference emphasized the importance of convincing the public that violence should be treated as a public health problem. As Marvin Wolfgang, a distinguished leader in the field of criminology, told conferees, "Our nation must feel as comfortable in controlling its violent behavioral urges and practices as it does in controlling bacterial, viral, and physical manifestations of morbidity and death" (U.S. DHHS, 1986).

Just as the application of public health principles and strategies has reduced the number of traffic fatalities and deaths attributed to tobacco use (CDC, 1999), the public health approach can help reduce the number of injuries and deaths caused by violence. Broader than the medical model, which is concerned with the diagnosis, treatment, and mechanisms of specific illnesses in individual patients, public health offers a practical, goal-oriented, and community-based approach to promoting and maintaining health. To identify problems and develop solutions for entire population groups, the public health approach:

- Defines the problem, using surveillance processes designed to gather data that establish the nature of the problem and the trends in its incidence and prevalence;
- Identifies potential causes through epidemiological analyses that identify risk and protective factors associated with the problem;
- Designs, develops, and evaluates the effectiveness and generalizability of interventions; and
- Disseminates successful models as part of a coordinated effort to educate and reach out to the public (Hamburg, 1998; Mercy et al., 1993).

The chapters in this report are keyed to each of these components of the public health approach. Chapter 2 presents research describing the magnitude of the problem of violent behavior by young people. Chapter 3 explores how violence develops and emerges over time. Chapter 4 summarizes research on risk and protective factors for youth violence; Appendix 4–B elaborates on the effects of exposure to media violence (including violence in interactive media) as a risk factor for aggressive and violent behavior. Chapter 5 focuses on the design, evaluation, and refinement of numerous programs and strategies that seek to reduce or prevent youth violence; Appendix 5–B provides details on specific programs discussed in the chapter. Chapter 6 suggests future courses of action, including the necessary next steps in research. A glossary of technical and discipline-specific terms follows.

MYTHS ABOUT YOUTH VIOLENCE

An important reason for making research findings widely available is to challenge false notions and misconceptions about youth violence. Myths such as those listed below are intrinsically dangerous. Assumptions that a problem does not exist or failure to recognize the true nature of a problem can obscure the need for informed policy or for interventions. An example is the conventional wisdom in many circles that the epidemic of youth violence so evident in the early 1990s is over. Alternatively, myths may trigger public fears and lead to inappropriate or misguided policies that result in inefficient use of scarce public resources. An example is the current policy of waiving or transferring young offenders into adult criminal courts and prisons.

Myth: The epidemic of violent behavior that marked the early 1990s is over, and young people—as well as the rest of U.S. society—are much safer today.

Fact: Although such key indicators of violence as arrest and victimization data clearly show significant reductions in violence since the peak of the epidemic in 1993, an equally important indicator warns against concluding that the problem is solved. Self-reports by youths reveal that involvement in some violent behaviors remains at 1993 levels (see Chapter 2).

Myth: Most future offenders can be identified in early childhood.

Fact: Exhibiting uncontrolled behavior or being diagnosed with conduct disorder as a young child does not predetermine violence in adolescence. A majority of young people who become violent during their adolescent years were not highly aggressive or "out of control" in early childhood, and the majority of children with mental and behavioral disorders do not become violent in adolescence (see Chapter 3).

Myth: Child abuse and neglect inevitably lead to violent behavior later in life.

Fact: Physical abuse and neglect are relatively weak predictors of violence, and sexual abuse does not predict violence. Most children who are abused or neglected will not become violent offenders during adolescence (see Chapter 4).

Myth: African American and Hispanic youths are more likely to become involved in violence than other racial or ethnic groups.

Fact: Data from confidential interviews with youths indicate that race and ethnicity have little bearing on the overall proportion of racial and ethnic groups that engage in nonfatal violent behavior. However, there are racial and ethnic differences in homicide rates. There are also differences in the timing and continuity of violence over the life course, which account in part for the overrepresentation of these groups in U.S. jails and prisons (see Chapter 2).

Myth: A new violent breed of young superpredators threatens the United States.

Fact: There is no evidence that young people involved in violence during the peak years of the early 1990s were more frequent or more vicious offenders than youths in earlier years. The increased lethality resulted from gun use, which has since decreased dramatically. There is no scientific evidence to document the claim of increased seriousness or callousness (see Chapter 3).

Myth: Getting tough with juvenile offenders by trying them in adult criminal courts reduces the likelihood that they will commit more crimes.

Fact: Youths transferred to adult criminal court have significantly higher rates of reoffending and a greater likelihood of committing subsequent felonies than youths who remain in the juvenile justice system.

They are also more likely to be victimized, physically and sexually (see Chapter 5).

Myth: Nothing works with respect to treating or preventing violent behavior.

Fact: A number of prevention and intervention programs that meet very high scientific standards of effectiveness have been identified (see Chapter 5).

Myth: In the 1990s, school violence affected mostly white students or students who attended suburban or rural schools.

Fact: African American and Hispanic males attending large inner-city schools that serve very poor neighborhoods faced—and still face—the greatest risk of becoming victims or perpetrators of a violent act at school. This is true despite recent shootings in suburban, middle-class, predominantly white schools (see Chapter 2).

Myth: Weapons-related injuries in schools have increased dramatically in the last 5 years.

Fact: Weapons-related injuries have not changed significantly in the past 20 years. Compared to neighborhoods and homes, schools are relatively safe places for young people (see Chapter 2).

Myth: Most violent youths will end up being arrested for a violent crime.

Fact: Most youths involved in violent behavior will never be arrested for a violent crime (see Chapter 2).

SOURCES OF DATA AND STANDARDS OF EVIDENCE

Data Sources

Several comprehensive scholarly reviews of various facets of youth violence were published in the 1990s. Professional organizations, Federal agencies, the National Academy of Sciences, and university-based researchers have invested immense energy in reviewing research on the occurrence and patterns of youth violence, its causes and consequences, intervention strategies, and implications for society.

Key contributions to this rich information base include:

- *NIMH Taking Stock of Risk Factors for Child/Youth Externalizing Behavior Problems* (Hann & Borek, in press)
- *Serious and Violent Juvenile Offenders* (Loeber & Farrington, 1998). A report of the Office of Juvenile Justice and Delinquency Prevention (OJJDP) Workgroup on Violence and Serious Offending
- The National Academy of Sciences' four-volume report *Understanding and Preventing Violence* (Reiss & Roth, 1993)
- The American Psychological Association's report *Violence and Youth* (APA, 1993) and *Reason to Hope* (Eron et al., 1994)
- *Preventing Crime: What Works, What Doesn't, What's Promising. A Report to the United States Congress* (Sherman et al., 1997)
- The OJJDP national report *Juvenile Offenders and Victims* (Snyder & Sickmund, 1999)
- The American Sociological Association's *Social Causes of Violence: Crafting a Science Agenda* (Levine & Rosich, 1996)

This report draws extensively—but not exclusively—on concepts, general information, and data contained in these documents. The authors gratefully acknowledge the contributors to and publishers of these earlier studies. Whenever the report draws heavily on one of these master sources, that fact is noted. Specific references to these documents are provided where appropriate.

Contributors to and editors of this report have also consulted peer-reviewed journals, books, and government reports and statistical compilations. Some information not considered in prior reviews is contained in this report. When appropriate, the editors have drawn on dissertations and forthcoming work that they judged to be of high quality.

During the development of this report, special data analyses were obtained from established surveys of U.S. adolescents. The key data sources for these analyses are the following:

- Monitoring the Future survey conducted annually by the University of Michigan's Institute for Social Research (Johnston et al., 1995)
- Youth Risk Behavior Surveillance Study sponsored by the Centers for Disease Control and Prevention in collaboration with Federal, state, and local partners (Brener et al., 1999)

- The National Center for Injury Prevention and Control's Firearm Injury Surveillance Study (CDC, NCIPC, 2000)
- Several longitudinal databases generated by the Program of Research on the Causes and Correlates of Delinquency, Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice (Huizinga et al., 1995)
- The National Center for Juvenile Justice's up-to-date information on juvenile arrests for violent crimes (Snyder, 2000)
- The National Crime Victimization Survey (Rand et al., 1998)

Standards of Scientific Evidence for Multidisciplinary Research

The public health approach relies on a multidisciplinary, multijurisdictional knowledge base. Thus, in preparing this report, it was necessary to draw conclusions from research in psychology (social, developmental, clinical, and experimental), sociology, criminology, neuroscience, public health, epidemiology, communications, and education. Integrating findings and conclusions across disciplinary lines is never easy. The questions under study generally determine what approach scientists will take to designing and conducting research, and the approach often determines how investigators report their findings and conclusions. Even when scientific approaches are similar, investigators in different disciplines frequently employ different terminology to describe similar concepts.

In striving to apply scientific standards consistently across the many fields of research reviewed, this report has emphasized two criteria: appropriately rigorous methods of inquiry and sufficient data to support major conclusions. The need for rigor is obvious: The tools or strategies employed in research—like the conclusions reached—are only as good as the precision with which research questions are framed. But the quality of a given study depends on other factors as well, including:

- General data collection design. Data may be obtained through four major types of study design: experimental, longitudinal, cross-sectional, and case study. This report relies primarily on experimental and longitudinal designs, with some use of cross-sectional studies. (These three methods are described below.)
- Sampling, or the selection of persons to be studied. Individuals in a study may be recruited or identified through probability or nonprobability sampling, or they may be assigned to experimental or control groups by a random process, a precision or group-matching process, or some other means. This report refers to probability samples as representative samples.
- Validity and reliability of measures or instruments used in the research.
- Appropriateness and level of control incorporated into the analysis of findings. Level of control refers to efforts to take into account other factors that might be influencing data or responses from subjects.
- Appropriateness and significance of generalizations.

As noted earlier, four of the chapters in this report—those concerned with magnitude, demographics, risk and protective factors, and intervention research and evaluation—mirror components of the public health approach to youth violence. Each of these areas involves research from different disciplines and scientific approaches; therefore, the types of research designs and forms of analysis presented differ somewhat from chapter to chapter.

Experimental research is the preferred method for assessing cause and effect as well as for determining how effectively an intervention works. Many of the violence prevention programs reviewed in Chapter 5 meet the standard of rigorous experimental (or well-executed quasi-experimental) designs. In an experimental study, researchers randomly assign an intervention to one group of study participants, the experimental group, and provide standard care or no intervention to another group, the control group. A study with a randomly assigned control group enables researchers to conclude that observed changes in the experimental group would not have happened without the intervention and did not occur by chance. The difference in outcome between the experimental and control groups, which in this case may be the reduction or elimination of violent behaviors, can then be attributed to the intervention.

Ideally, researchers assign study participants to the experimental intervention or the control group at random. Randomization eliminates bias in the assignment process and provides a way of determining the likelihood that the effects observed occurred by chance. In this report, most weight is given to true experimental studies. In some cases, true experiments may be too difficult or expensive to conduct, or they may pose unacceptable ethical problems. In such cases, carefully designed and executed quasi-experimental studies are accepted as meeting the standard.

Evidence from an experimental study is considered stronger when, in addition to analyzing the main effects of an intervention, researchers analyze the mediating effects. This analysis permits researchers to determine whether a change in the targeted risk or protective factor accounts for the observed change in violence—that is, did the intervention work because it changed the degree of risk? Without this information, researchers cannot explain the success of a program.

Chapters 4 and 5 make use of meta-analyses. Meta-analysis describes a statistical method for evaluating the conclusions of numerous studies to determine the average size and consistency of the effect of a particular treatment or intervention strategy common to all of the studies. The technique makes the results of different studies comparable so that an overall effect can be identified. A meta-analysis determines whether there is consistent evidence that a treatment has a statistically significant effect, and it estimates the average size of that effect.

Epidemiological research, reviewed in Chapters 2 and 3, focuses primarily on general population studies that use probability samples and cross-sectional or longitudinal designs (Kleinbaum et al., 1982; Lilienfeld & Lilienfeld, 1980; Rothman & Greenland, 1998). Probability samples let researchers generalize from their study to the entire population sampled. Cross-sectional studies involve a single contact with participants for data collection at a given point in time. Multiple cross-sectional studies involve several waves of data collection over time (annually, for example) but typically with different participants at each contact and therefore with no way to link a given person's responses at one time with those at a later time. Prospective longitudinal and panel designs involve multiple contacts with the same study participants over time. Responses at one data collection point can be linked to responses at a later point. Longitudinal studies are used for research on individual development or growth.

Longitudinal designs are necessary to estimate the predictive effect of a given risk or protective factor on later violent behavior. Although cross-sectional designs are sometimes used, they cannot provide estimates of individual-level predictive effects. They can establish simultaneous relationships between risk factors and violence, but conclusions drawn from cross-sectional studies are not as strong as those drawn from longitudinal studies. In cross-sectional studies, cause and effect are unclear and reciprocal effects may inflate the estimates.

Experimental studies are sometimes used to estimate the effects of risk and protective factors, but this practice is rare because of ethical and cost considerations. For example, it would be unthinkable to introduce drug use to a group of adolescents to see whether drugs are a risk factor for violence. However, it would be ethical to conduct a predictive study that selects persons who are not violent and follows them over time. Those who began to use illicit substances would be compared with those who did not, to determine whether drug users are more likely to become involved in violent behaviors at some later date. If they were, then the results would indicate that drug use predicts violence or that drug use increases the probability of future violence.

Level of Evidence

No single study, however well designed, is sufficient to establish causation or, in intervention research, efficacy or effectiveness. Findings must be replicated before gaining widespread acceptance by the scientific community. The strength of the evidence amassed for any scientific fact or conclusion is referred to as the level of evidence.

This report does not rely on any single study for conclusions. Only findings that have been replicated in several studies, consistently and with no contrary results, are reported as part of the contemporary knowledge base. When the report cites unreplicated studies that are of high quality, that have not been refuted by other evidence, and that point in a clear direction, the findings are described as tentative or suggestive. These findings may point to future research needs and directions, but the report takes a conservative approach to drawing conclusions from them.

OVERVIEW OF THE REPORT'S CHAPTERS

The Surgeon General's report on youth violence reviews a vast, multidisciplinary, and often controversial research literature. Chapters 2 through 5 address, respectively, the extent and magnitude of youth violence; the developmental characteristics of, or paths to, youth violence; personal and environmental factors that may either place a child or adolescent at risk of violent behavior or protect a young person from succumbing to those risk factors; and violence intervention and prevention programs. The final chapter in the report identifies areas of opportunity for future efforts to combat and prevent youth violence.

This section provides a brief overview of each chapter, while the following section presents a summary of key conclusions drawn from each.

Chapter 2 examines the magnitude of and trends in youth violence over the last two decades. It describes two different, but complementary ways of measuring violence—official reports and self-reports. Official arrest data offer an obvious means of determining the extent of youth violence. Indeed, a surge in arrests for violent crimes marked what is now recognized as an epidemic of youth violence from 1983 to 1993. Arrests were driven largely by the rapid proliferation of firearms use by adolescents engaging in violent acts and the likelihood that violent confrontations would—as they did—produce serious or lethal injuries. Today, with fewer young people carrying weapons, including guns, to school and elsewhere than in the early 1990s, violent encounters are less likely to result in homicide and serious injury and therefore are less likely to draw the attention of police. By 1999, arrest rates for homicide, rape, and robbery had all dropped below 1983 rates. In contrast, arrest rates for aggravated assault remained higher than they were in 1983, having declined only 24 percent from the peak rates in 1994.

Another way of measuring violence is on the basis of confidential reporting by youths themselves. Confidential surveys find that 10 to 15 percent of high school seniors report having committed an act of serious violence in recent years. These acts typically do not come to the attention of police, in part because they are less likely to involve firearms than in previous years. Over the past two decades, self-reported violence by high school seniors increased nearly 50 percent, a trend similar to that found in arrests for violent crimes. But this proportion has not declined in the years since 1993—it remains at peak levels. Chapter 2 considers how and to what extent arrest data and self-report data vary, including variations by sex and race or ethnicity. In the aggregate, the best available evidence from multiple sources indicates that youth violence is an ongoing national problem, albeit one that is largely hidden from public view.

Chapter 3 examines routes that may lead a young person into violence. Viewed from a developmental perspective, violence stems from a complex interaction of individuals with their environment at particular times in their lives. Longitudinal research has enabled investigators to describe the emergence of violence in terms of two, and possibly more, life-course trajectories. Chapter 3 discusses the early-onset and late-onset emergence of violence, which occur before and after puberty, respectively. These trajectories offer insights into the likely course, severity, and duration of violence over the life course and have practical implications for the timing of intervention programs and strategies. The chapter reviews research on the co-occurrence of serious violence and other problems, including drug use and mental disorders. Finally, it underscores the importance—and the paucity—of research on factors associated with the cessation of youth violence or its continuation into adulthood.

Extensive research in recent decades has sought to identify various personal characteristics and environmental conditions that either place children and adolescents at risk of violent behavior or that seem to protect them from the effects of risk. Risk and protective factors, which are the focus of Chapter 4, can be found in every area of life. They exert different effects at different stages of development, they tend to appear in clusters, and they appear to gain strength in numbers. As the chapter notes, risk probabilities apply to groups, not to individuals. Although risk factors are not necessarily causes, a central aim of the public health approach to youth violence is to identify these predictors and determine when in the life course they typically come into play. Such information enables researchers to design preventive programs that can be put in place at just the right time to be most effective.

The chapter examines risk from the perspectives of both childhood and adolescence and, within each of these developmental periods, considers risk factors occurring in the individual, family, school, peer group, and community domains. Childhood risk factors for violence in adolescence include involvement in serious (but not necessarily violent) criminal acts and substance use before puberty, being male, aggressiveness, low family socioeconomic status/poverty, and antisocial parents—all either individual or family risk factors. The influence of family is largely supplanted in adolescence by peer influences, thus risk factors with the largest predictive effects in adolescence include weak social ties, ties to antisocial or delinquent peers, and belonging to a gang. Having committed serious (but not necessarily violent) criminal offenses is also an important risk factor in adolescence.

Identifying and understanding how protective factors influence behavior is potentially as important to preventing and stopping violence as identifying and understanding risk factors. Several protective factors have been proposed, but to date only two have been found to buffer the risk of violence—an intolerant attitude toward deviance and commitment to school. Protective factors warrant, and are beginning to receive, more research attention.

Despite past contentions that "nothing works" to prevent youth violence, the evidence presented in Chapter 5 demonstrates that prevention efforts can be effective against both early- and late-onset violence in the general youth population, high-risk youths, and even youths who are already violent or seriously delinquent. The chapter highlights 27 specific programs that, based on existing data, help prevent youth violence. The most effective of these programs combine components known to prevent violence by themselves, particularly social skills training for youths and interventions that include parents or entire families.

Chapter 5 also highlights important limitations in the current research on youth violence prevention. Little is known about the scientific effectiveness of hundreds of programs now being used in U.S. schools and communities. This situation is disconcerting, given that many well-intentioned youth violence prevention programs have been found ineffective or harmful to youths. Even less is known about how to implement effective programs on a national scale without compromising their results.

The information presented in Chapter 5 shows that youth violence prevention not only works, it can also be cost-effective. In a number of cases, the long-term financial benefits of prevention are substantially greater than the costs of the programs themselves. These promising findings indicate that prevention plays an important role in providing a safe environment for youths.

Finally, Chapter 6 presents several options for future action. First, the scientific base must continue to be expanded. Effective interventions exist, but only continued research can document those programs that meet a standard of effectiveness and those that do not—and should therefore be discarded. The chapter identifies the following courses of action:

- Continue to build the science base
- Accelerate the decline in gun use by youths in violent encounters
- Facilitate the entry of youths into effective intervention programs rather than incarcerating them

- Disseminate model programs with incentives that will ensure fidelity to original program design when taken to scale
- Provide training and certification programs for intervention personnel
- Improve public awareness of effective interventions
- Convene youths and families, researchers, and private and public organizations for a periodic youth violence summit
- Improve Federal, state, and local strategies for reporting crime information and violent deaths

CHAPTER CONCLUSIONS

Chapter 2

1. The decade between 1983 and 1993 was marked by an epidemic of increasingly lethal violence that was associated with a large rise in the use of firearms and involved primarily African American males. There was a modest rise in the proportion of young persons involved in other forms of serious violence.
2. Since 1994, a decline in homicide arrests has reflected primarily the decline in use of firearms. There is some evidence that the smaller decline in nonfatal serious violence is also attributable to declining firearm use.
3. By 1999, arrest rates for violent crimes—with the exception of aggravated assault—had fallen below 1983 levels. Arrest rates for aggravated assault remain almost 70 percent higher than they were in 1983, and this is the offense most frequently captured in self-reports of violence.
4. Despite the present decline in gun use and in lethal violence, the self-reported proportion of young people involved in nonfatal violence has not declined from the peak years of the epidemic, nor has the proportion of students injured with a weapon at school declined.
5. The proportion of schools in which gangs are present continued to increase after 1994 and has only recently (1999) declined. However, evidence shows that the number of youths involved with gangs has not declined and remains near the peak levels of 1996.
6. Although arrest statistics cannot readily track firearm use in specific serious crimes other than homicide, firearm use in violent crimes declined among persons of all ages between 1993 and 1998.
7. The steep rise and fall in arrest rates for homicide over the past two decades have been matched by similar, but less dramatic changes in some of the other indicators of violence, including arrest rates for all violent crimes and incident rates from victims' self-reports. This pattern is not matched by arrests for selected offenses, such as aggravated assault, or incident rates and prevalence rates from offenders' self-reports.
8. Young men—particularly those from minority groups—are disproportionately arrested for violent crimes. But self-reports indicate that differences between minority and majority populations and between young men and young women may not be as large as arrest records indicate or conventional wisdom holds. Race/ethnicity, considered in isolation from other life circumstances, sheds little light on a given child's or adolescent's propensity for engaging in violence.
9. Schools nationwide are relatively safe. Compared to homes and neighborhoods, schools have fewer homicides and nonfatal injuries. Youths at greatest risk of being killed in school-associated violence are those from a racial or ethnic minority, senior high schools, and urban school districts.

Chapter 3

1. There are two general onset trajectories for youth violence—an early one, in which violence begins before puberty, and a late one, in which violence begins in adolescence. Youths who become violent before about age 13 generally commit more crimes, and more serious crimes, for a longer time. These young people exhibit a pattern of escalating violence through childhood, and they sometimes continue their violence into adulthood.

2. Most youth violence begins in adolescence and ends with the transition into adulthood.
3. Most highly aggressive children or children with behavioral disorders do not become serious violent offenders.
4. Surveys consistently find that about 30 to 40 percent of male youths and 15 to 30 percent of female youths report having committed a serious violent offense by age 17.
5. Serious violence is part of a lifestyle that includes drugs, guns, precocious sex, and other risky behaviors. Youths involved in serious violence often commit many other types of crimes and exhibit other problem behaviors, presenting a serious challenge to intervention efforts. Successful interventions must confront not only the violent behavior of these young people, but also their lifestyles, which are teeming with risk.
6. The differences in patterns of serious violence by age of onset and the relatively constant rates of individual offending have important implications for prevention and intervention programs. Early childhood programs that target at-risk children and families are critical for preventing the onset of a chronic violent career, but programs must also be developed to combat late-onset violence.
7. The importance of late-onset violence prevention is not widely recognized or well understood. Substantial numbers of serious violent offenders emerge without warning signs in their childhood. A comprehensive community prevention strategy must address both onset patterns and ferret out their causes and risk factors.

Chapter 4

1. Risk and protective factors exist in every area of life—individual, family, school, peer group, and community. Individual characteristics interact in complex ways with people and conditions in the environment to produce violent behavior.
2. Risk and protective factors vary in predictive power depending on when in the course of development they occur. As children move from infancy to early adulthood, some risk factors will become more important and others less important. Substance use, for example, is a much stronger risk factor at age 9 than it is at age 14.
3. The strongest risk factors during childhood are involvement in serious, but not necessarily violent criminal behavior, substance use, being male, physical aggression, low family socioeconomic status or poverty and antisocial parents—all individual or family characteristics or conditions.
4. During adolescence, the influence of family is largely supplanted by peer influences. The strongest risk factors are weak ties to conventional peers, ties to antisocial or delinquent peers, belonging to a gang, and involvement in other criminal acts.
5. Risk factors do not operate in isolation—the more risk factors a child or young person is exposed to, the greater the likelihood that he or she will become violent. Risk factors can be buffered by protective factors, however. An adolescent with an intolerant attitude toward deviance, for example, is unlikely to seek or be sought out by delinquent peers, a strong risk factor for violence at that age.
6. Given the strong evidence that risk factors predict the likelihood of future violence, they are useful for identifying vulnerable populations that may benefit from intervention efforts. Risk markers such as race or ethnicity are frequently confused with risk factors; risk markers have no causal relation to violence.
7. No single risk factor or combination of factors can predict violence with unerring accuracy. Most young people exposed to a single risk factor will not become involved in violent behavior; similarly, many young people exposed to multiple risks will not become violent. By the same token, protective factors cannot guarantee that a child exposed to risk will not become violent.

Chapter 5

1. A number of youth violence intervention and prevention programs have demonstrated that they are effective; assertions that "nothing works" are false.
2. Most highly effective programs combine components that address both individual risks and environmental conditions, particularly building individual skills and competencies, parent effectiveness training, improving the social climate of the school, and changes in type and level of involvement in peer groups.
3. Rigorous evaluation of programs is critical. While hundreds of prevention programs are being used in schools and communities throughout the country, little is known about the effects of most of them.
4. At the time this report was prepared, nearly half of the most thoroughly evaluated strategies for preventing violence had been shown to be ineffective—and a few were known to harm participants.
5. In schools, interventions that target change in the social context appear to be more effective, on average, than those that attempt to change individual attitudes, skills, and risk behaviors.
6. Involvement with delinquent peers and gang membership are two of the most powerful predictors of violence, yet few effective interventions have been developed to address these problems.
7. Program effectiveness depends as much on the quality of implementation as the type of intervention. Many programs are ineffective not because their strategy is misguided, but because the quality of implementation is poor.

PREPARATION OF THE REPORT

To address the troubling presence of violence in the lives of U.S. youths, the Administration and Congress urged the Surgeon General to develop a report on youth violence, with particular focus on the scope of the problem, its causes, and how to prevent it. Surgeon General Dr. David Satcher requested three agencies, all components of the Department of Health and Human Services, to share lead responsibility for preparing the report. The agencies are the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the Substance Abuse and Mental Health Services Administration (SAMHSA).

Under Dr. Satcher's guidance, these agencies established a Planning Board comprising individuals with expertise in diverse disciplines and professions involved in the study, treatment, and prevention of youth violence. The Planning Board also enlisted individuals representing various Federal departments, including particularly the Department of Justice (juvenile crime aspects of youth violence), the Department of Education (school safety issues), and the Department of Labor (the association between youth violence and youth employment, and out-of-school youth). Invaluable assistance was obtained as well from individual citizens who have founded and operate nonprofit organizations designed to meet the needs of troubled and violent youths. Most important, young people themselves accepted invitations to become involved in the effort. All of these persons helped to plan the report and participated in its prepublication reviews.

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CHAPTER 2

THE MAGNITUDE OF YOUTH VIOLENCE

Headlines proclaim that the epidemic of youth violence that began in the early 1980s is over, but the reality behind this seemingly good news is far more complex and unsettling. Public health studies show that youth violence is an ongoing, startlingly pervasive problem. This chapter describes the magnitude of and trends in violent crime by young people, focusing on homicide, robbery, aggravated assault, and forcible rape (see Box 2–1 for definitions). A later chapter (Chapter 4) seeks to explain why young people become involved in violence in the first place.

MEASURING YOUTH VIOLENCE

Surveillance is the backbone of the public health approach to youth violence or any other public health problem. It reveals the magnitude of a problem, tracks the magnitude over time, and uses the information gained from such monitoring to help shape actions to prevent or combat the problem.

Two approaches to measuring the magnitude of youth violence are commonly used. The first relies on official crime statistics compiled by law enforcement agencies, typically arrest reports. These statistics cannot answer questions about how many young people commit violent crimes or how many violent crimes were committed, but they can answer questions about the number of crimes reported to the police, the volume and types of arrests, and how the volume changes over time.

The second approach surveys young people and asks them in confidence about violent acts they have committed or have been victims of during a given period of time. Such reports can be obtained from the same group of people over a long period of time (a longitudinal survey) or from different groups of people at the same point in time (a cross-sectional survey). A prominent example of a repeated cross-sectional survey cited in this chapter is Monitoring the Future, a survey of high school seniors that has been conducted

Box 2–1. Definitions of the four violent crimes considered in this report

Criminal Homicide—Murder and Non-Negligent Manslaughter

The willful (non-negligent) killing of one human being by another.

Robbery

The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or putting the victim in fear.

Aggravated Assault

An unlawful attack by one person upon another wherein the offender uses a weapon or displays it in a threatening manner, or the victim suffers obvious severe or aggravated bodily injury involving apparent broken bones, loss of teeth, possible internal injury, severe laceration, or loss of consciousness.

Forcible Rape

The carnal knowledge of a person, forcibly and/or against that person's will, or not forcibly or against the person's will where the victim is incapable of giving consent because of his/her temporary or permanent mental or physical incapacity (or because of his/her youth).

Source: U.S. Department of Justice, Federal Bureau of Investigation, 2000.

annually since 1975. Reports from young people themselves offer the best way to measure violent behavior that never reaches the attention of the justice system. In fact, evidence in this chapter makes it unmistakably clear that most crimes by young people do not reach the attention of the justice system.

Self-reports are well suited to answering such questions as: What proportion of youths are violent? What types of violent acts do they commit? Has the volume of violence changed over time? Are there differences by sex and race/ethnicity? When during development does violence arise, and what forms does it take? How do children's patterns of violence evolve over time, and how long do they last? These questions relate to the magnitude of violent behavior and to its developmental pathways, and they are addressed in this chapter and the next.

Both arrest reports and self-reports are reasonably valid and reliable ways of measuring the particular aspects of violence they were designed to measure (for general reviews see Blumstein et al., 1986; Cook & Laub, 1998; Elliott & Huizinga, 1989; Hindelang et al., 1981; Huizinga & Elliott, 1986). Arrests appear to be more objective, but they are not a good general measure of violent behavior, for several reasons. First, the majority of aggravated assaults, robberies, and rapes are never reported to the police; arrests are made in fewer than half of reported crimes (Cook & Laub, 1998; Maguire and Pastore, 1999; Snyder & Sickmund, 1999); and most youths involved in violent crimes are never arrested for a violent crime (Elliott et al., 1989; Loeber et al., 1998; Huizinga et al., 1995). Thus, arrests seriously underestimate the volume of violent crime and fail to distinguish accurately between those who are and are not involved in violence. Second, arrest records do not accurately reflect the distribution of reported violent crimes; that is, the offenses for which youths are arrested are not representative of the crimes reported to police (Cook & Laub, 1998). Nonetheless, arrest records are the best measure of the justice system's response to observed or reported crime.

Self-reports were designed specifically to overcome the limitations of violence measures based on official records of criminal behavior. They provide a more direct measure of criminal behavior, but they too have their limitations. Youths may fail to report their violent behavior accurately, either deliberately or because of memory problems, and they may exaggerate their involvement, reporting rather trivial events in response to questions about serious forms of violence. Research reveals that exaggeration (overreporting) is a greater problem than underreporting for reports that cover the previous year (Elliott & Huizinga, 1989), but sophisticated self-report measures can minimize these potential sources of error (Elliott & Huizinga, 1989; Huizinga & Elliott, 1986). The advantages of self-reports are that they capture not only unreported offenses but also details not found in arrest records. In addition, this measure of violent offending is not subject to any of the biases that might be involved in arrest processes.[1] The general conclusion from studies evaluating the validity and reliability of self-reports is that they compare favorably with other standard, accepted social science indicators (Hindelang et al., 1981).

Both types of measures contribute to our understanding of violence. The key to using them is to understand their relative strengths and limitations, determine where they reinforce each other and where they diverge or conflict, and then interpret the differences in findings, if possible (Brener et al., 1995; Hindelang et al., 1981; Huizinga & Elliott, 1986; Snyder & Sickmund, 1999).

THE VIOLENCE EPIDEMIC

Arrest rates of young people for homicide and other violent crimes skyrocketed from 1983 to 1993. In response to the dramatic increase in the number of murders committed by young people. Congress and many state legislatures passed new gun control laws, established boot camps, and began waiving children as young as 10 out of the juvenile justice system and into adult criminal courts. Then, starting in the mid-1990s, overall arrest rates began to decline, returning by 1999 to rates only slightly higher than those in 1983.

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[1] Questions have been raised about potential racial/ethnic biases in both types of measures. There is evidence that arrests of whites, compared to those of African Americans, are underrepresented in local arrest records and archives (Geerken, 1994). Some studies find racial/ethnic bias in arrests and other justice system processing, while others do not (for reviews, see Austin & Allen, 2000; Hawkins et al., 1998; Sampson & Lauritsen, 1997). Comparisons of an individual's arrest and self-reported offenses reveal a greater discrepancy for African Americans than whites, with African American males self-reporting fewer of the offenses found in their official records (Hindelang et al., 1981; Huizinga & Elliott, 1986). If one accepts the accuracy of arrest records, this finding would indicate an underreporting on the part of African American males, but there are reasons to question this assumption (see Elliott, 1982; Huizinga & Elliott, 1986). The question of racial/ethnic bias in both measures remains controversial.

Several important indicators were used to track youth violence during these years, but their findings did not always agree. Arrest rates, as noted above, provide strong evidence of both a violence epidemic between 1983 and 1993/1994 and a subsequent decline to 1999. Several other indicators of violence furnish similar, but not as robust evidence of a violence epidemic that later subsided. However, the decline in arrest rates is not uniform for all types of violent crime. Moreover, another key indicator—the volume of violent behavior, which is based on self-reports—does not show a decline in youth violence after 1993. As explained later, that indicator remained high and essentially level from 1993 to 1998. This chapter answers the questions raised by these disparate findings—namely, whether the epidemic of violence is really over and why leading indicators of youth violence do not agree.

A rise and subsequent decline in the use of firearms and other weapons by young people provides one potential explanation for the different trends in arrest records and self-reports. The violence epidemic was accompanied by an increase in weapons carrying and use. During this era, instant access to weapons, especially firearms, often turned an angry encounter into a seriously violent or lethal one, which, in turn, drew attention from the police in the form of an arrest. As weapons carrying declined, so too did arrest rates, perhaps because the violence was less injurious or lethal. But the amount of underlying violent behavior (on the basis of self-reports) did not change much—if anything, it appears to have increased in recent years. That undercurrent of violent behavior could reignite into a new epidemic if weapons carrying rises again. From a public health perspective, a resurgence of weapons carrying—and hence the potential for another epidemic of violence—poses a grave threat.

ARRESTS FOR VIOLENT CRIMES

The Federal Bureau of Investigation (FBI) monitors arrests made by law enforcement agencies across the United States through the Uniform Crime Reporting (UCR) program. Since the 1930s, this program has compiled annual arrest information submitted voluntarily by thousands of city, county, and state police agencies. This information currently comes from police jurisdictions that represent only 68 percent of the population, so FBI figures represent projections of these data to the entire U.S. population (Snyder & Sickmund, 1999).

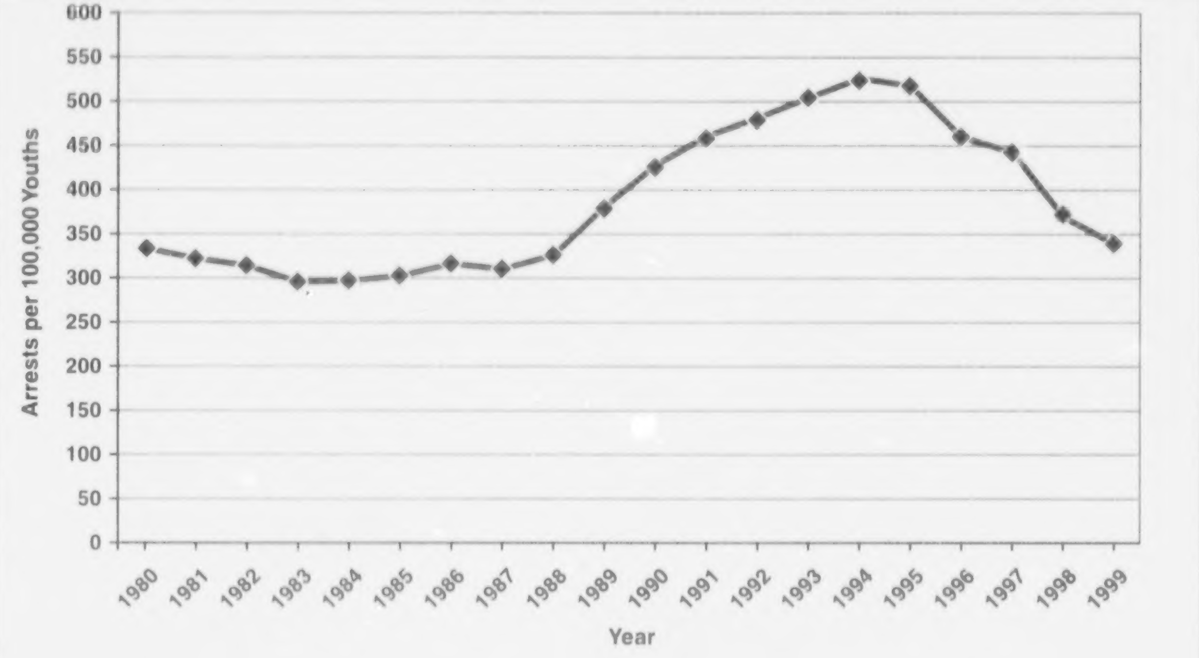
The UCR tabulates the number, rate, and certain features of arrests made by law enforcement agencies. Because some people are arrested more than once a year, the UCR cannot provide an accurate count of the number of people arrested or the proportion of the total population arrested (the prevalence). Nor can the UCR provide an accurate count of the number of crimes committed. A single arrest may account for a series of crimes, or a single crime may involve the arrest of more than one person. Young people tend to commit crimes in groups, so the number of youths arrested inflates the number of crimes committed (Snyder & Sickmund, 1999). As noted earlier, arrest rates are also prone to certain types of error. Unless indicated otherwise, the figures on arrests were assembled by the FBI.

Arrest Rates and Trends

As shown in Figure 2–1, overall arrest rates for violent crimes by youths between the ages of 10 and 17 rose sharply from 1983 to 1993/1994. Rates then declined until 1999, the most recent year for which figures are available.

Figure 2–2, page 21, shows arrest rates for each of the four violent crimes considered in this report. In 1999, arrests of young people for all crimes totaled 2.4 million (Snyder, unpublished), with 104,000 arrests for violent crimes. Arrests for aggravated assault (69,600) and robbery (28,000) were the most frequent, with arrests for forcible rape (5,000) and murder (1,400) trailing significantly behind. In 1998, youths

Figure 2–1. Arrest rates of youths age 10–17 for serious violent crime, 1980–1999



Sources: Snyder, unpublished.

accounted for one out of six arrests for all violent crimes, a share that has decreased slightly (16 percent) in recent years (Snyder, unpublished). Although the 1999 arrest rate for violent crimes was the lowest in this decade, it is still 15 percent higher than the 1983 rate (Snyder, unpublished). As seen in Figure 2–2, the 1999 rates for homicide, robbery, and rape are below the 1983 rates; however, arrests for aggravated assault are still nearly 70 percent higher than 1983 rates.

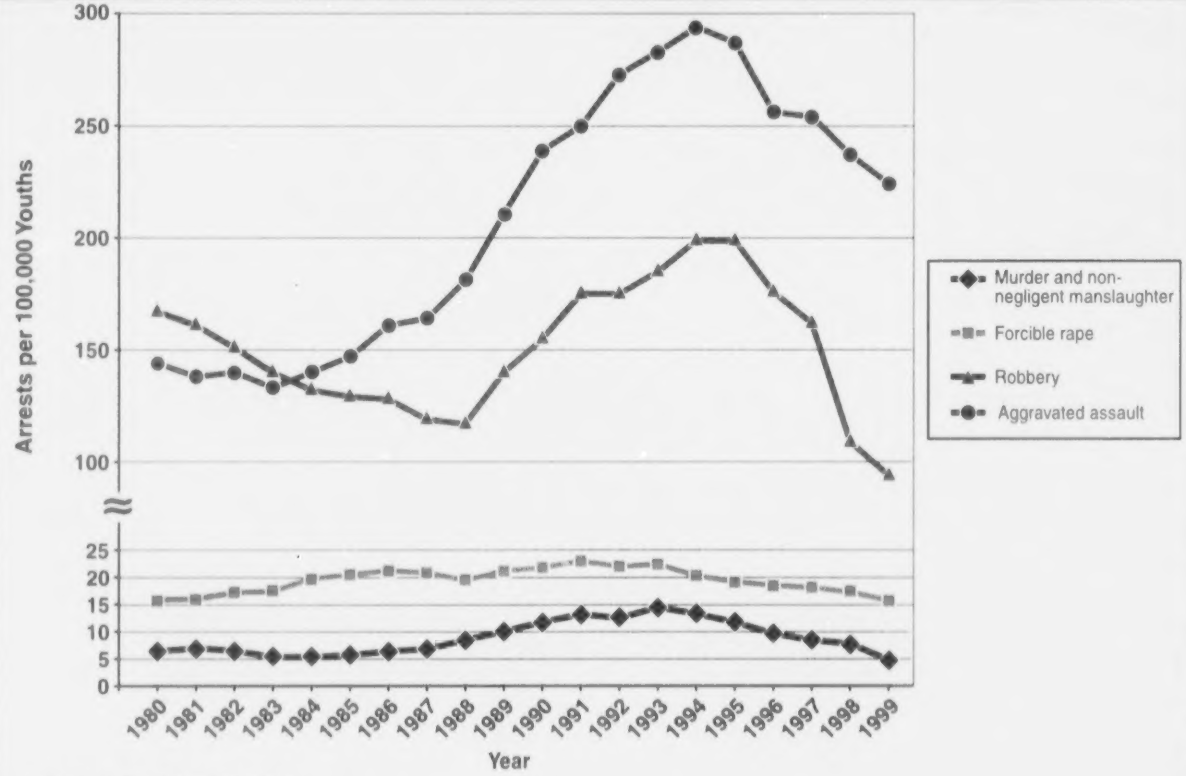
The sheer magnitude of the increase in arrest rates between 1983 and 1993/1994 is striking. Overall, arrest rates of youths for violent offenses grew by about 70 percent. The increase in homicides committed by young people was particularly alarming. Both the rate of homicide arrests and the actual number of young people who were arrested for a homicide nearly tripled (Snyder & Sickmund, 1999). This increase was consistent for adolescents at each age between 14 and 17 (Snyder & Sickmund, 1999).

The Role of Firearms

The decade-long upsurge in homicides was tied to an increased use of firearms in the commission of crimes (Cherry et al., 1998; Snyder & Sickmund, 1999). Likewise, the downward trend in homicide arrests from 1993 to 1999 can be traced largely to a decline in firearm usage. The critical role of firearms in homicide and other violent crimes is supported by arrest, victimization, hospitalization, and self-report data.

Analysis of arrest data (Figure 2–3, page 22) shows an unequivocal upsurge in firearm usage by young people who committed homicide. In 1983, youths were equally likely to use firearms and other weapons, such as a knife or club, to kill someone. By 1994, 82 percent of homicides by young people were committed with firearms (Snyder & Sickmund, 1999). Virtually all of the increase in firearm-related homicides involved African American youths (Snyder & Sickmund, 1999). The precipitous drop in homicides between 1994 and 1998 coincided with a decline in firearm usage, again mostly by African American youths (Snyder & Sickmund, 1999).

Figure 2–2. Arrest rates of youths age 10–17 for serious violent crime, by type of crime, 1980–1999



Sources: Snyder, unpublished.

Analysis of Supplementary Homicide Report data on young victims of homicide[2] reinforces this pattern of firearm use. A large increase in the number of young people killed by firearms between 1987 and 1993 was followed by a decrease. More than 2,000 youths were homicide victims in 1993, the peak year (Snyder & Sickmund, 1999). Most victims were male, and a disproportionately high percentage were African American males (Snyder & Sickmund, 1999).

The use of firearms in violent crimes other than homicide cannot readily be tracked in youth arrest statistics, but for Americans of all ages, firearm use in violent crimes increased from 1985 to 1992 and then declined from 1993 to 1998. Firearm use during robberies increased 33 percent between 1985 and 1992; the decline in firearm use from 1993 to 1998 was nearly 20 percent for aggravated assaults but only 6 percent for robbery (Cook & Laub, 1998; Maguire & Pastore, 1995, 1999).

Firearm use can also be tracked indirectly, through victims treated in hospital emergency departments. Since 1992, injuries related to firearms have been monitored through an emergency department surveillance system.[3] Although there are no data from this source to corroborate the growing pattern of firearm injuries before 1992, there are data to corroborate the decline since then. Figure 2–4 presents a special analysis of emergency department surveillance data on youths age 10 to 19. It shows that the rate of firearms-related injuries among young people treated in hospital emergency departments dropped by almost 50 percent from 1993 to 1998. Data on male youths alone reveal a similarly dramatic drop.

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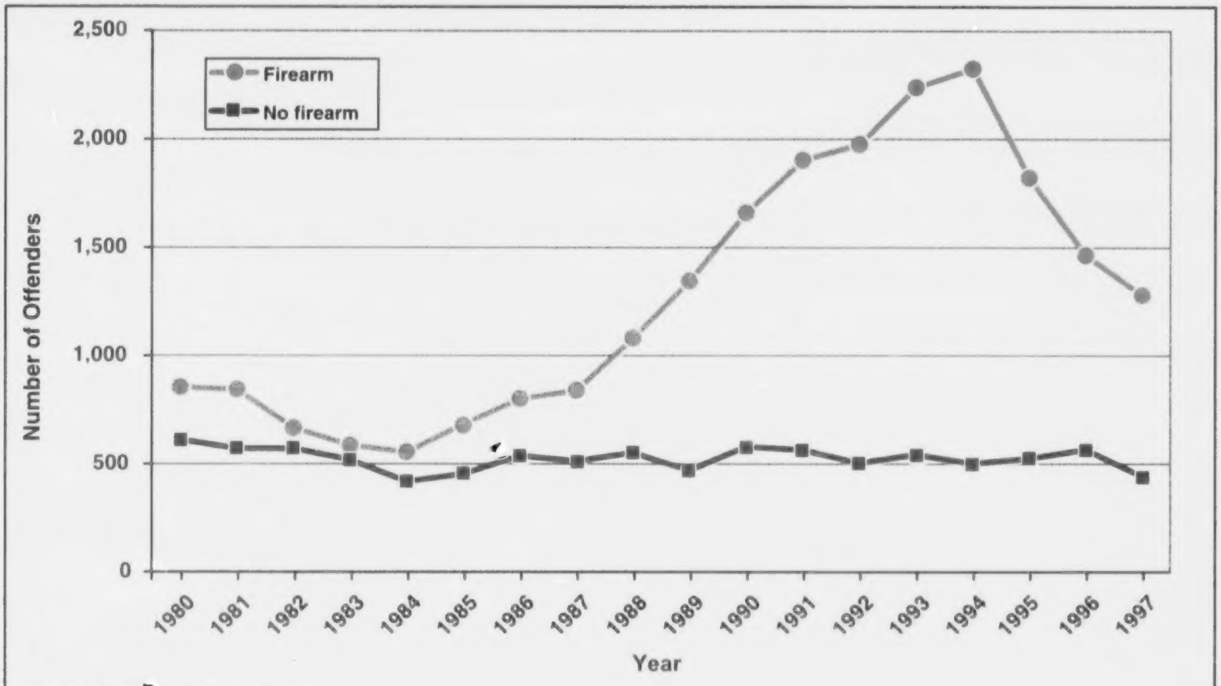
[2] Youths are victims in about 27 percent of homicides committed by other youths (Snyder & Sickmund, 1999).

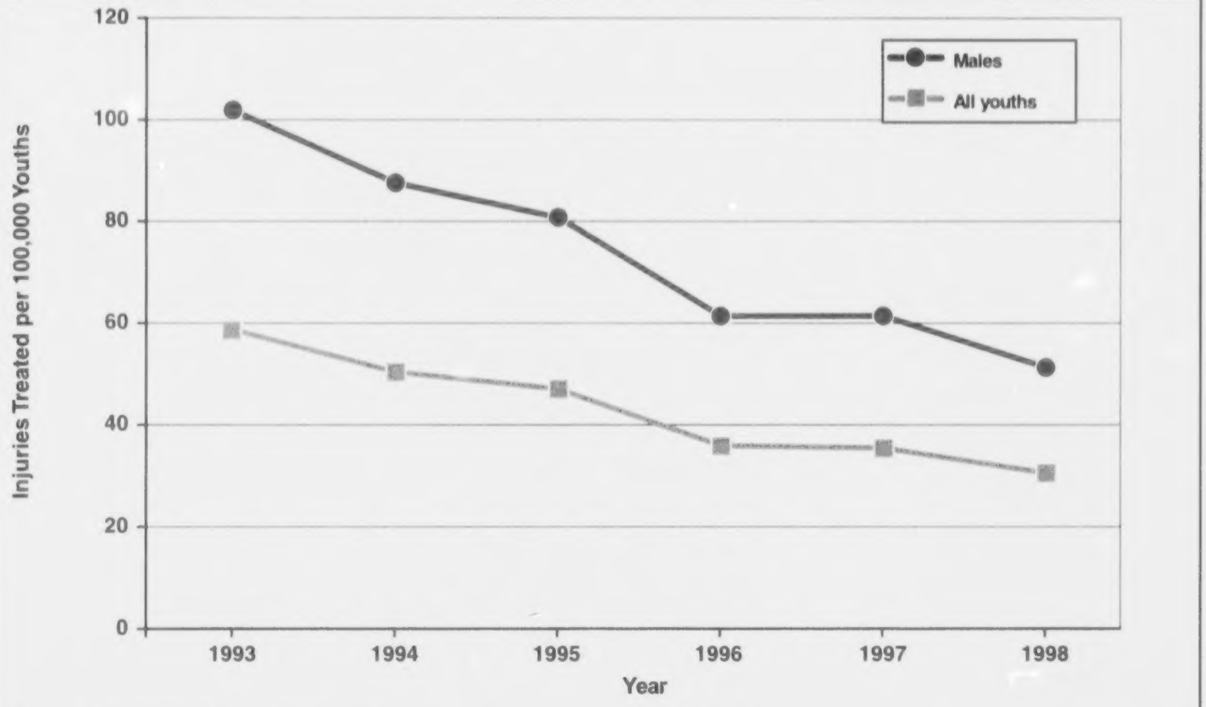
[3] The National Electronic Injury Surveillance System (NEISS); NEISS is operated by the U.S. Consumer Product Safety Commission.

Figure 2–3. Firearm- and nonfirearm-related homicides by youths, 1980–1997



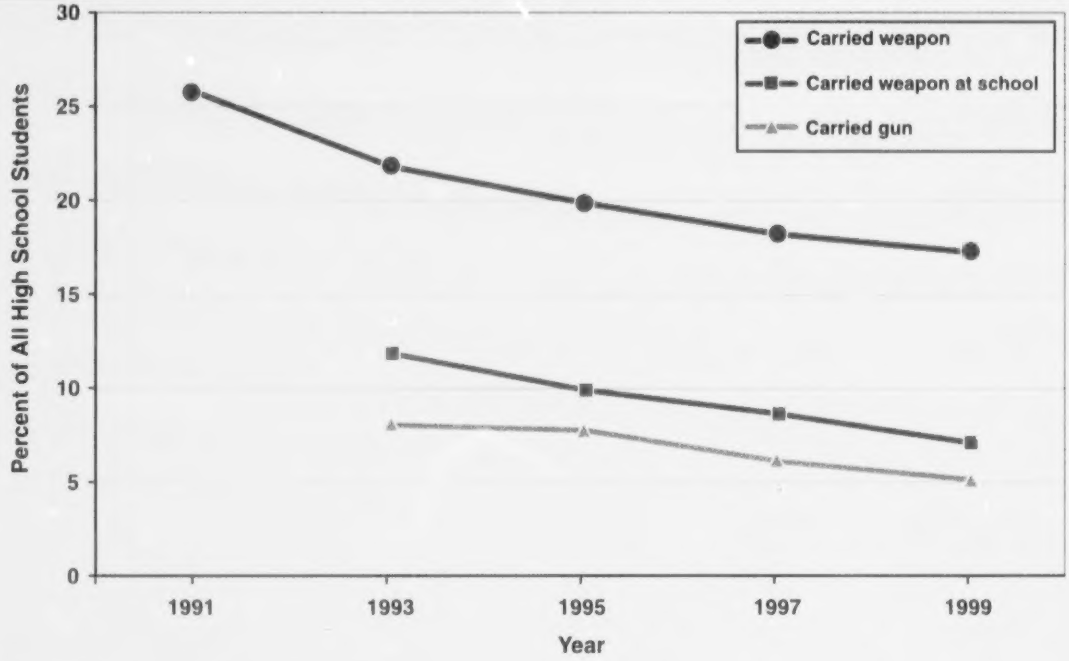
Source: Snyder & Sickmund, 1999.

Figure 2–4. Nonfatal firearm-related injuries of youths age 10–19 treated in hospital emergency departments, 1993–1998



Source: CDC, 2000b. Rates and 95% confidence intervals are presented in Appendix 2–A.

Figure 2–5. High school students who carried weapons,* 1991–1999



Source: Adapted from Brener et al., 1999.

*On 1 or more of the 30 days preceding the survey. 95% confidence intervals for carried weapon = ± 1.3–2.3; for carried weapon at school = ± 0.9–1.5; and for carried gun = ± 0.8–1.3.

In the early 1990s, high school students began to report that they were increasingly less likely to carry guns anywhere and specifically less likely to carry them to school. Figure 2–5 illustrates these trends, as well as trends in general weapons carrying, based on data from the Youth Risk Behavior Survey (YRBS).[4] Each trend shows a significant linear decrease, although the decline in weapons carrying in general leveled off in 1999 (Brener et al., 1999; CDC, 2000a; Kann et al., 2000).

Thus, there has been an upsurge and then a decline in the use of firearms and weapons over the past two decades. The easy availability of guns and the resulting rise in lethal violence was caused at least in part by the emerging crack cocaine markets in the mid-1980s and the recruitment of youths into these markets, where carrying guns became routine (Blumstein & Wallman, 2000). It also resulted from changes in the types of guns manufactured, with cheaper, larger caliber guns flooding the gun markets (Wintemute, 2000).

The reasons for the decline are complex and not well understood, but they do involve changes in the carrying and use of guns in violent encounters (Blumstein & Wallman, 2000). The explanations most often given are a decline in youth involvement in the crack market and in gang involvement in crack distribution, police crackdowns on gun carrying and illegal gun purchases, longer sentences for violent crimes involving a gun, a strong economy, and expanded crime and violence prevention programs. After reviewing these and other potential explanations for the drop in violence, Blumstein and Wallman (2000) concluded that no single factor was responsible; rather, the decrease in violence resulted from the combination of many factors.

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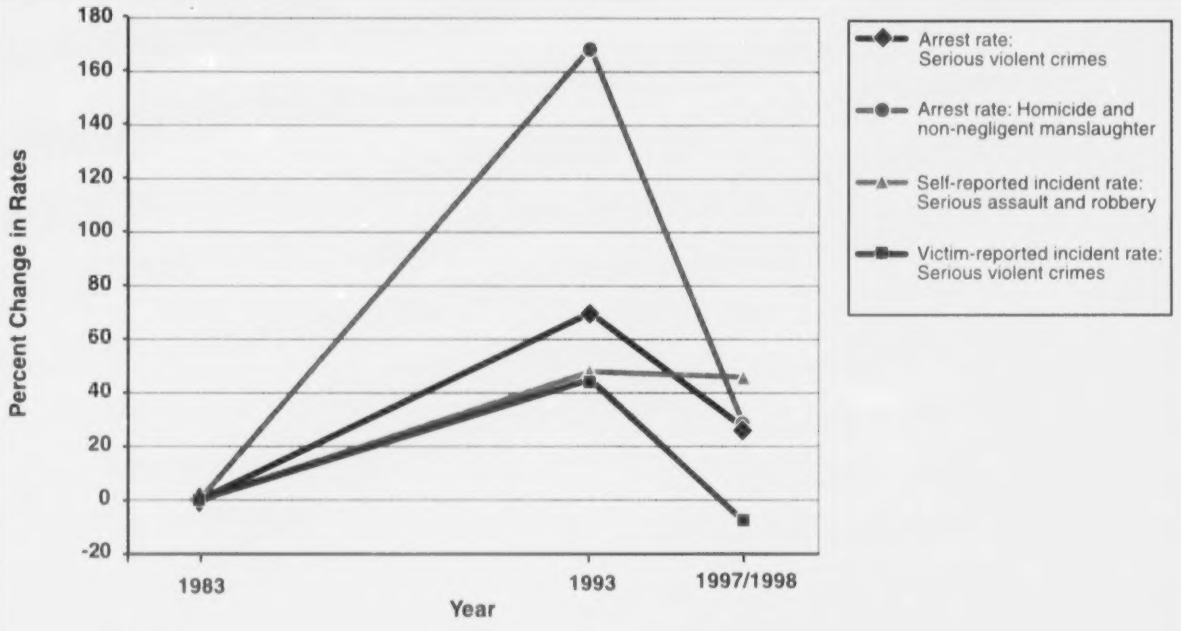
[4] Begun in 1990, the YRBS is a national school-based survey conducted every 2 years by the Centers for Disease Control and Prevention in collaboration with Federal, state, and local partners. It is representative of students in grades 9 through 12 in both public and private schools. YRBS monitors six important health behaviors, including those that may result in violent injuries. The survey is voluntary, anonymous, provides for parental consent for minors, and oversamples minorities (Kolbe et al., 1993). The 1999 survey included more than 15,000 respondents (Kann et al., 2000).

Figure 2–6. Trends in youth violence since 1983



Sources: Arrest rate for serious violent crimes: Snyder, unpublished. Arrest rate for homicide and non-negligent manslaughter: Snyder, unpublished. Self-reported incident rate of serious assault and robbery: Maguire and Pastore, 1999; Monitoring the Future data. Victim-reported incident rate of serious violent crimes: National Crime Victimization Survey; Snyder & Sickmund, 1999.

Comparing Arrests to Other Trends

As noted above, the steep rise and fall in arrest rates over the past two decades has been matched to some extent by changes in leading indicators of violence. Figure 2–6 tracks the trends in four indicators: arrest rates for homicide only, arrest rates for all serious violent crimes, incident rates from victims' self-reports, and incident rates from offenders' self-reports.

The incident rate is a measure of the volume of violence. It refers to the number of self-reported violent acts within a given-sized population—in this case, the number of violent acts per 1,000 young people. In contrast, the prevalence rate indicates what proportion of that population is involved in one or more violent behaviors. Figure 2–6 compares arrest rates with self-reported incident rates (rather than with prevalence rates) because both measure the volume of violent events. Even though arrest and incident rates measure different events and have different absolute magnitudes, the degree of change in these rates over time can be compared.

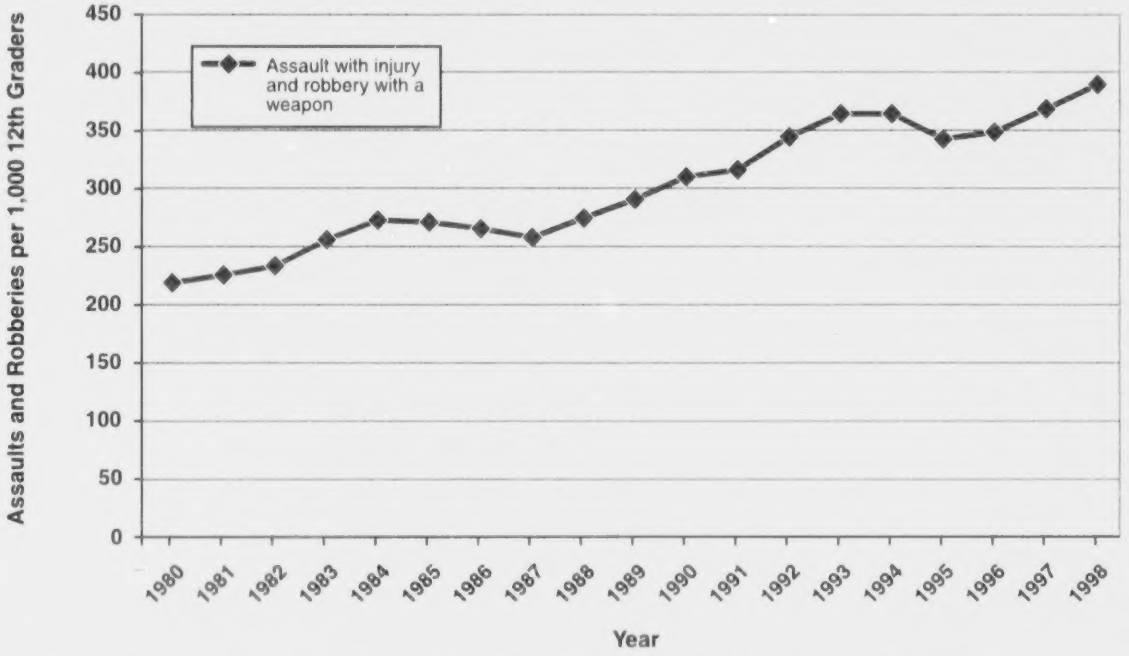
Arrests Versus Self-Reported Incidents

The sharpest increases in Figure 2–6 are for the two arrest indicators. Homicide arrest rates were roughly 170 percent higher in 1993 than in 1983, and arrest rates for all serious violent crimes were 70 percent higher. The incident rates of serious violent crimes reported by victims and the rates of serious assault and robbery reported by offenders increased to a lesser extent, by about 50 percent.

By 1999, arrest rates for homicide, robbery, and rape had dropped below their 1983 levels; by 1997, victim-reported incident rates had dropped back to roughly their 1983 levels. Arrests for aggravated assaults remained high, however—at almost 70 percent above their 1983 level. Since the peak year of arrests for aggravated assault (1994), arrests for this violent crime have declined only 24 percent.

Self-reported violent offending showed no decline at all. After rising by about 50 percent, the incident rate of self-reported serious assaults and robbery remained essentially level through 1998. The leveling off of

Figure 2–7. Trends in incident rates of serious violence among 12th graders, assault with injury and robbery with a weapon combined, 1980–1998



Source: Maguire and Pastore, 1999. Rates calculated from Monitoring the Future data by Elliott, senior scientific editor.

Entries are 3-year running averages of the number of assaults and robberies per 1,000 12th graders. 95% confidence intervals for annual estimates are all ± 16 to 42 offenses.

these rates after 1993 is troubling, for it indicates that the rise and fall in arrest rates are set against a backdrop of ongoing violent behavior. This picture of ongoing violence is borne out by prevalence rates and trends from the Monitoring the Future survey (MTF). Trends in the incident rate of serious violence are shown again in Figure 2–7, this time graphed according to magnitude rather than percentage of change.[5]

PREVALENCE OF VIOLENT BEHAVIOR

Prevalence refers to the proportion of American youths involved in one or more violent behaviors. UCR arrest rates, as discussed earlier, cannot be used to calculate prevalence. The only national youth survey from which long-term trends in self-reported violent behavior can be gleaned is the MTF,[6] which was begun in 1975 and is conducted annually by the University of Michigan's Institute for Social Research. The longest-running survey of youths, MTF asks a nationally representative sample of high school seniors about a wide range of social attitudes and behaviors.[7] Although the survey is administered at school, it asks about violent behavior and victimization across all community settings.

It is worth reiterating that self-reports, whether by offenders or victims, are an essential research tool for determining the extent of youth violence. They furnish a window into violent behavior that never reaches the police. For example, the National Crime Victimization Survey reveals that the majority (58 percent) of serious violent crimes committed by youths are not reported to the police (Snyder & Sickmund, 1999). A large fraction of the crimes that are reported never result in an arrest. Estimates indicate that only 6 to 14 percent of chronic violent offenders are ever arrested for a serious violent crime (Dunford & Elliott, 1984; Elliott, 2000a; Huizinga et al., 1996; Loeber et al., 1998).

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[5] This self-reported incident rate appears to be much higher (e.g., almost 400 assaults with injury and robberies with a weapon were reported per 1,000 high school seniors in 1998) than the arrest rate for aggravated assault and robbery (about 350 arrests per 100,000 youth, see Figure 2–2), but the two are not strictly comparable: high school seniors (17- and 18-year-olds) have much higher arrest rates as a group than do 10- to 17-year-olds.

[6] The MTF prevalence estimates for both violent behavior and drug use have been confirmed by other studies in which there is overlap in years and ages. For example, see Elliott et al. (1989) and Menard and Elliott (1993).

[7] About 16,000 high school seniors at 130 schools participate, although only about 3,000 of the students are asked questions about their violent behavior. Since the beginning of the survey in 1975, the participation rate among schools has ranged from 60 to 80 percent, and the student response rate has ranged from 77 to 86 percent (Kaufman et al., 1998

The MTF gathers data about five acts of violence and from them compiles a violence index (see Figure 2–8 for the specific offenses included). This violence index is not the same as the UCR violent crime index, which aggregates the four types of arrests covered in this chapter. According to the MTF's violence index, about 3 out of 10 high school seniors reported having committed a violent act in the past year, an annual prevalence rate of about 30 percent. The MTF's violence index has been relatively stable for almost 20 years, in sharp contrast to the dramatic increase in arrests.

Although the prevalence rate of self-reported violent behavior is relatively constant, it is still strikingly high, partly because high school seniors age 17 and 18 are at the peak ages of violent offending and partly because the violence index includes some less serious violent behaviors as well as some very serious ones.

Because this report focuses on violent behavior carrying the potential for serious injury or death, Figure 2–8 also includes the prevalence rates of assault with injury and robbery with a weapon, the two most serious acts in the MTF violence index. An assault with injury could lead to an arrest for aggravated assault; likewise, a robbery with a weapon could lead to an arrest for armed robbery. Therefore, assault with injury and robbery with a weapon may be used as proxy measures for aggravated assault and armed robbery, respectively.

Over the past two decades, the MTF's prevalence rates for assault with injury ranged from 10 to 15 percent (± 1.3 to 1.8). A small but significant increase took place between 1979 and 1998. About half of this increase occurred between 1983 and 1993, but rates remained fairly constant after 1993 (the increase from 1993 to 1998 shown in Figure 2–8 is not statistically significant). The prevalence of robbery with a weapon ranged from 2 to 5 percent (± 0.7 to 1.1) between 1983 and 1993 and remained constant thereafter. Thus, unlike arrest data, MTF data show no evidence of a downward trend in self-reported assaults or robberies after 1993.

Prevalence rates of this magnitude—10 to 15 percent of high school seniors[8]—for the most serious types of violence are confirmed by other self-report surveys described in Chapter 3. For example, an average prevalence rate of 9 percent (± 2.0) was reported for 17-year-olds between 1976 and 1982 in the National Youth Survey, whose measure of violence includes aggravated assault, robbery, gang fights, and rape. This rate is similar to the MTF's, but the National Youth Survey measure includes more serious violent offenses. Two general city surveys—the Denver Youth Survey and the Rochester Youth Development Survey, which use the same measure of violence as the National Youth Survey—report somewhat higher prevalence rates among 17-year-olds: 12 percent (± 1.6) and 14 percent (± 2.0), respectively.[9]

International Prevalence

Are U.S. youths unique in reporting a high prevalence of violent behavior? How do they compare to their European counterparts? The answers can be found by comparing the MTF findings with the International Self-Report Delinquency Study (Junger-Tas et al., 1994), a study of delinquent behavior conducted in several European countries.

Like the MTF, this study relies on self-reported behavior. Of the countries included, only England/Wales, the Netherlands, Spain, and Italy used a probability sample that provided national estimates of violence comparable to the violence index used in the MTF survey. Self-reported serious violence

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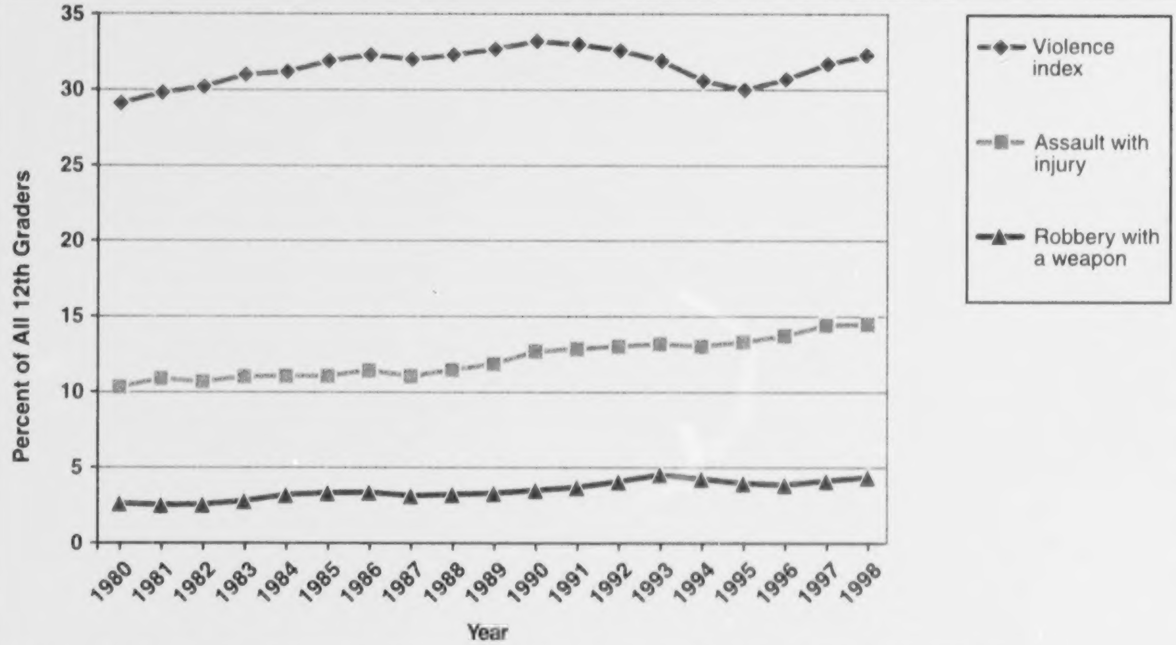
[8] The prevalence rates for assault with injury and robbery are not additive.

[9] The rates for both the National Youth Survey and the city surveys were calculated by the senior scientific editor of this report (Elliott, 2000b) from gender-specific data in Elliott et al. (1998) and Huizinga et al. (1995).

Figure 2–8. Trends in prevalence of serious violence among 12th graders, 1980–1998



Sources: Rates for violence index: Johnston, 2000; rates for assault with injury and robbery with weapon: Maguire and Pastore, 1999.

Entries above are 3-year running averages of the prevalence of each of the specified acts. The violence index is defined as the percent committing any of the specified following five acts, with no missing data allowed: hit an instructor or supervisor; gotten into serious fight in school or at work; taken part in a fight where a group of your friends were against another group; hurt somebody badly enough to need bandages or a doctor (assault with injury); used a knife or gun or some other thing (like a club) to get something from a person (robbery with a weapon). 95% confidence intervals for the violence index are all less than ± 2.5%; for assault, less than ± 2%; for robbery, less than ± 1.1%.

among young people age 16 to 17 in these countries in 1992 or 1993 ranged from 16 to 26 percent (Table 2–1). These prevalence rates are lower than the U.S. rate of about 30 percent for the MTF's violence index. Thus, while the questions in the international study may be somewhat different, the findings show that while a higher proportion of U.S. youths commit violent acts, youth violence is not unique to the United States.

A major difference between the United States and several other industrial countries is the ease of access to firearms. From 1990 to 1995, the United States had the highest rate of firearm-related deaths among youths in the industrialized world (CDC, 1997). The rate for children below age 15 was five times higher than that of 25 other countries combined.

In summary, youth violence, although international in scope, is greater in the United States, more likely to involve firearms, and more lethal in its consequences. According to self-reports, both the prevalence and incidence (volume) of assault and robbery increased among U.S. high school seniors between 1983 and 1993. This finding is consistent with an epidemic of violence among U.S. youths, although self-reports point to a more modest upsurge than arrest trends do. However, both self-reports and arrest rates for aggravated assault point to an ongoing problem of youth violence after the apparent end of the violence epidemic. Thus, the rise and fall in arrest rates for most violent offenses is set against more enduring rates of violent behavior.

DIFFERENCES BY SEX AND RACE/ETHNICITY

Self-reported violence and arrest rates for violent offenses can also be compared by sex and by race/ethnicity. Ratios based on these two sources of data show similar findings with respect to sex but remarkably different findings with respect to race/ethnicity—differences that have yet to be fully explained.

Table 2–1. International comparison of the annual and cumulative prevalence of self-reported violent behavior[a] by youths, 1992–1993[b]

Country	Annual Prevalence Age 16–17		Cumulative Prevalence Age 14–21		Sample
	Percent	95% CI ±[c]	Percent	95% CI ±[c]	
England/Wales (N)	17.8 (315)	4.2	31.0 (1834)	2.1	National probability household
Netherlands (N)	26.3 (236)	5.6	38.3 (914)	3.2	National probability household
Spain (N)	24.4 (531)	3.6	38.8 (914)	3.2	National probability stratified
Italy[d] (N)	15.9 (377)	3.7	20.1 (1009)	2.5	Three-city probability
United States[e] (N)	32.2 (2731)	1.8	NA	NA	National probability schools

Sources: Junger-Tas et al., 1994; Maguire & Pastore, 1991; Monitoring the Future data.

[a] Includes the following behaviors: carrying a weapon, threatening for money, fighting/public disorder or engaging in riots, beating up family, beating up nonfamily, hurting with weapons. For MTF: hit instructor/supervisor, serious fight at school/work, gang fight, physical assault with injury, robbery with weapon.

[b] Some surveys were conducted in 1992 and some in 1993.

[c] CI = confidence interval.

[d] Three cities: Genoa, Siena, and Messina.

[e] Monitoring the Future survey, high school seniors.

Differences in Self-Reports

Self-reported rates of serious violent behavior differ widely by sex but considerably less by race. Table 2–2 compares the violent incident rate (the number of robberies and assaults per 1,000 high school seniors) and the violence index prevalence rate (the prevalence of the five serious acts of violence described in Figure 2–8) by sex and by race. The table focuses on two critical periods, 1983 to 1993 and 1993 to 1998. In general, there was little change in those periods, with one exception.

In 1983 and 1993, the ratios of male to female youths committing violent acts were 7.4 to 1 and 7.0 to 1, respectively. This means that for every violent act committed by female youths in these years, at least seven violent acts were committed by male youths. By 1998, this ratio had closed to 3.5 to 1, indicating that females are closing the gap. The difference in prevalence rates changed little over the same period, but at a ratio of 2 to 1, it was much smaller to begin with. Taken together, the trends show that the proportions of males and females involved in violence (the prevalence rate) have not changed but that the relative number of violent acts by males and females (the incident rate) has changed, with females committing more violent acts in 1998 than in earlier years.

Differences by race are also presented in Table 2–2. The only available national comparisons for serious violence are for white and African American youths (see Chapter 3 for local longitudinal studies that include rates for Hispanic youths). Overall, incident rates are lower for white than African American youths over these years; the gaps are largest in 1993 and 1998, when approximately 1.5 violent acts were

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Table 2–2. Differences in youths' self-reported serious violent behavior, by sex and race, 1983, 1993, and 1998

Year	Male:Female Ratio		African American:White Ratio	
	Violent Incident Rate*	Violence Index Prevalence Rate†	Violent Incident Rate*	Violence Index Prevalence Rate†
1983	7.4	1.8	1.2	0.9
1993	7.0	1.7	1.5	1.1
1998	3.5	1.7	1.6	1.1

Sources: Rates for violence index: Johnston, 2000; rates for individual acts: Maguire and Pastore, 1999.

* Violent incident rate reflects the number of assaults with injury and robberies with a weapon reported per 1,000 high school seniors.

† Violence index prevalence rate reflects the proportion of high school seniors reporting one or more of the following behaviors: hit an instructor or supervisor, gotten into a serious fight at school or work, taken part in a fight where a group of your friends were against another group, hurt somebody badly enough to need bandages or a doctor, used a knife or gun or some other thing (like a club) to get something from a person.

committed by African Americans for every 1 violent act by whites. The racial gap appeared to increase somewhat during the violence epidemic and has remained higher through 1998. There are essentially no differences by race in the prevalence rates for serious self-reported violent behavior.

Differences in Arrest Rates

Arrest rates differed widely by sex and by race/ethnicity between 1983 and 1998 (Table 2–3). Overall, the difference was greater by sex than by race/ethnicity and was most evident in regard to homicide arrests: In 1998, 11 times as many males were arrested as females. A similar male-female gap was evident for robbery, but the gap for aggravated assault was considerably smaller.

Trends in the male-female gap vary, depending on the crime for which youths are arrested. From 1983 to 1993, the male-female disparity in homicide arrests doubled: In other words, the violence epidemic was driven by arrests of males. During the same period, the male-female gap in arrests for both robbery and aggravated assault shrank. More recently, from 1993 to 1998, the male-female disparity in all three types of arrests has held constant or declined further.

Differences in arrest rates by sex are similar in magnitude to differences in self-reported violent incidents. Combining aggravated assault and robbery arrest data yields male:female ratios of 6.8 to 1, 5.7 to 1, and 4.3 to 1 for 1983, 1993, and 1998, respectively.[10] The ratios for self-reported incidents were 7.4 to 1, 7.0 to 1, and 3.5 to 1 (Table 2–2). Thus, both self-report and arrest rates attest to a difference by sex in the volume of violence but also to a narrowing of that gap between 1983 and 1998—except for homicide arrests. Possible reasons for the male-female gap are discussed in Chapter 4.

Self-reports and arrest rates provide different pictures of violent offending by race. Self-reports, as noted above, reveal small differences between African American and white youths. Arrest records, on the other hand, reveal large differences, even though these gaps narrowed between 1993 and 1998 (Table 2–3). The narrowing of the gap was particularly noteworthy for homicide arrests: Whereas about nine African American youths were arrested for every white youth in 1993, only about five were arrested for each white youth in 1998. Even at 5 to 1, the ratio of African American to white youths arrested for homicide remains greater than that of Native American or Asian youths to white youths.

Ratios cannot be calculated for Hispanic youths because data for this ethnic group are not broken out in the UCR or other systematic data collection systems (Soriano, 1998). A few regional and city studies

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[10] Calculations by Elliott, senior scientific editor, from Snyder (unpublished).

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Table 2–3. Differences in youth arrests for serious violent crimes, by sex and race/ethnicity, 1983, 1993, and 1998

Crime	Male:Female Ratio			African American: White Ratio			Native American: White Ratio			Asian:White Ratio		
	1983	1993	1998	1983	1993	1998	1983	1993	1998	1983	1993	1998
Homicide	8.0	16.0	11.3	5.4	9.0	5.3	1.3	0.9	3.4	0.7	0.7	1.0
Robbery	13.7	9.7	10.0	12.9	8.8	6.4	0.9	0.7	1.1	1.1	0.9	0.7
Aggravated assault	4.9	4.4	3.3	3.6	4.0	3.1	1.0	1.0	1.1	0.4	0.5	0.5
Rape	NA	NA	NA	7.6	4.1	3.4	1.4	0.9	1.1	0.4	0.2	0.3

Source: Snyder, unpublished.

suggest that homicide arrest rates for Hispanic males are substantially higher than those for non-Hispanic white males and that African American males typically have the highest rates (Prothrow-Stith & Weissman, 1991; Smith et al., 1988; Sommers & Baskin, 1992; Zahn, 1988). The difference between homicide arrests of Hispanic and non-Hispanic white youths is substantial in these studies, but it is not as great as the difference between African American and white youths.

The existence of much larger racial and ethnic differences in arrest rates than in self-reported violence is a matter of great concern. On the one hand, there is no reason to expect similar distributions, because these measures were designed to assess different aspects of violence. But if both measures are valid and reliable, the discrepancy suggests that the probability of being arrested for a violent offense varies with race/ethnicity. Explanations for this discrepancy focus on selective reporting of offenses to the police, different patterns of police surveillance, racial/ethnic biases in self-report measures, and racial/ethnic bias on the part of police, victims, and witnesses. Some studies have explored these explanations, but their findings are not definitive (Austin & Allen, 2000; Blumstein et al., 1986; Hawkins et al., 1998; Sampson & Lauritsen, 1997). This complex issue will also be discussed in Chapter 3, which considers other dimensions of violent offending.

Arrest ratios of Native American[11] to white youths are similar, except for the homicide ratio in 1998. Similarly, arrest rates of Asian Americans for homicide and robbery differ little from those of whites, but at least two whites are arrested on charges of rape or aggravated assault for every Asian American. Possible reasons for these differences have not been well studied.

In sum, racial and ethnic differences in rates of violence are greater in arrest statistics than in self-reports of violent behavior. The reasons are not well understood, with conflicting evidence from various studies. Self-reports and arrest records produce similar estimates of trends in violence by sex: Violent behavior still occurs more often among male than female youths, but the gap has been narrowing.

VIOLENCE AT SCHOOL

Recent shootings at schools have galvanized public concern about school safety, but studies described here find that schools nationwide are relatively safe. In contrast to public perceptions, schools have fewer homicides and nonfatal injuries than homes and neighborhoods. However, some students are at greater risk of being killed or injured at school than others—specifically, senior high school students from racial or ethnic minorities who attend schools in urban districts (Kachur et al., 1996).

Homicides and Nonfatal Injuries

Two nationwide studies of school homicides have been conducted by the Centers for Disease Control and Prevention in collaboration with the U.S. Departments

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[11] The 1998 arrest rate was atypically high for the 1993–1999 period. This rate was twice the rate for every other year over this period and appears to be an anomaly.

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of Education and Justice. The first study covered a 2-year period from July 1992 through June 1994 and identified 68 students who were killed on or near school grounds or at school-related events (Kachur et al., 1996). Most of the victims were male and were killed with a firearm. These homicides represent less than 1 percent of all youth homicides in the period studied, and the estimated incidence of school-associated violent death was 0.09 per 100,000 student-years.[12] Those at greatest risk of being killed were from racial or ethnic minorities, from senior high schools, and from urban school districts. The homicide rate in urban schools, for example, was nine times greater than the rate in rural schools. Most offenders and victims alike were male, under age 20, and from a racial or ethnic minority. The most common motives were an interpersonal dispute or gang-related activities.

The second study, using the same methodology, updated the figures through June 1999 (CDC, 2000a). It identified 177 students age 5 to 19 who were killed in this 5-year period; the vast majority of the homicides (84 percent) involved firearms. School-associated homicides remained at less than 1 percent of all homicides among students, but the frequency of homicides involving more than one victim increased. The three school years from August 1995 through June 1998 saw an average of five multiple-victim homicides or homicide-suicides per year. An average of one such event occurred in each of the 3 years from August 1992 through July 1995.

Thus, trends throughout the 1990s show that the number of school homicides has been declining. Yet within this overall trend, homicides involving more than one victim appear to have been increasing.

In regard to nonfatal injuries at school, the National Crime Victimization Survey found in 1998 that the rate of serious violent crimes against youths age 12 to 18 was one-half as great when they were at school as when they were not. At school, the highest victimization rates were among male students and younger students (age 12 to 14) (Kaufman et al., 2000). The rate was highest in urban schools in 1992, but by 1998 the rates at urban, suburban, and rural schools were similar. Overall, between 1992 and 1998, the rate of serious violent crimes at school remained relatively stable at about 8 to 13 per 1,000 students (Kaufman et al., 2000).

The stability of this trend is corroborated by the MTF survey, which asks high school seniors whether they have been victims of violence. The percentage of seniors reporting that they had been injured with a weapon at school remained stable at about 5 percent from 1976 to 1998 (Flanagan & Maguire, 1992; Maguire & Pastore, 1999) (Figure 2–9). The same victimization rate is reported by the National Study of Delinquency Prevention in Schools for 1998 (Gottfredson et al., 2000). However, the MTF trend masks large fluctuations in victimization reported by African American students (Figure 2–9). From 1980 to 1998, between 4 (± 2.8) and 13 (± 3.6) percent of African American students reported having been injured with a weapon at school.

Weapons at School

Recent findings regarding students carrying weapons (a gun, knife, or club, for example) at school are encouraging. In 1999, the Youth Risk Behavior Survey (YRBS) found that about 7 percent of all high school students reported carrying a weapon on school property within the last 30 days (Kann et al., 2000) (Figure 2–5). In 1993, almost 12 percent of high school students reported carrying a weapon at school in the last 30 days (Kann et al., 1995), a 42 percent decrease (Brener et al., 1999; Kann et al., 2000). A somewhat less pronounced decline was apparent among high school seniors in the MTF survey (Kaufman et al., 1998). Both studies found the problem to be of roughly the same magnitude: In 1995, about 6 to 8 percent of 12th graders reported carrying a weapon at school at least once during the past month.

Evidence of an upsurge in the number of students carrying weapons at school before 1993 is less clear. The YRBS first asked this question in 1993, and the MTF did not ask until the 1990s. Nonetheless, smaller or less representative studies suggest a substantial increase in weapon carrying between the 1980s and the early 1990s (reviewed in Elliott et al., 1998).

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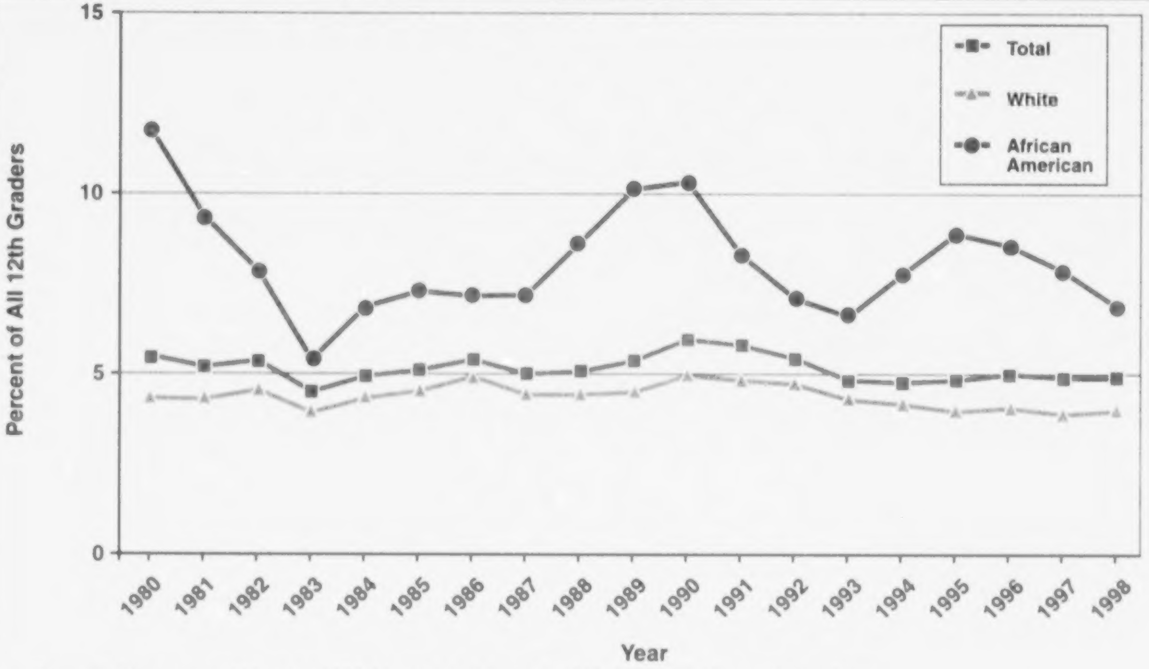
[12] Figure includes 63 homicides and 12 suicides.

Figure 2–9. Twelfth graders injured with a weapon at school, 1980–1998



Sources: Flanagan and Maguire, 1992; Maguire and Pastore, 1999. Data from Monitoring the Future.

Entries are 3-year running averages of the percentage of 12th graders who reported that someone had injured them with a weapon at school during the past 12 months. Examples of weapons are knives, guns, and clubs. "At school" means inside or outside the school building or on a school bus. 95% confidence intervals for total sample and whites are less than ± 1.5%; for African Americans, less than ± 4.6%.

Perceptions of School Violence

Although the overall risk of violence and injury at school has not changed substantially over the past 20 years, both students and their parents report being increasingly apprehensive about their schools. Studies reveal that, during the early 1990s, students grew more fearful about being attacked or harmed at school and that they were avoiding certain places within their schools (Kaufman et al., 1998). By 1999, these fears had subsided somewhat (Kaufman et al., 2000), but parents still say they are afraid for their children at school. A recent Gallup poll found that nearly half of the parents surveyed feared for their children's safety when they sent them off to school, whereas only 24 percent of parents reported this concern in 1977 (Gallup, 1999a). In May 1999, shortly after the shootings at Columbine High School in Littleton, Colorado, 74 percent of parents said that a school shooting was very likely or somewhat likely to happen in their community (Gallup, 1999b).

Public perceptions about school safety seem at odds with the evidence that the risk for serious violence at school has not changed substantially over the past 20 years. But several indicators of violence did increase during the epidemic—school fights, gangs, drug use, and students carrying weapons to school. While gangs and weapon carrying have declined recently, the rates of drug use and physical fighting are high and have not changed between 1991 and 1999 (Brenner et al., 1999). Today's school bullies are still more likely to be carrying guns than those of the early 1980s, and the proportion of students reporting that they felt too unsafe to go to school has not changed since the peak of the violence epidemic in the mid-1990s. These findings add to the concern that the violence epidemic is not yet over.

GANGS AND VIOLENCE

Gang members, a relatively small proportion of the adolescent population, commit the majority of serious youth violence (see Spergel, 1990, for a review). In two major longitudinal studies in Denver and Rochester (discussed in more detail in Chapter 3), 14 to 30 percent of the youths surveyed were gang members at some time during the study, and they accounted for 68 to 79 percent of the serious violence reported (Thornberry, 1998). Similar findings have been reported in other studies using nonrandomized local samples (Battin et al., 1996; Fagan, 1990). In Rochester, 66 percent of chronic violent offenders were in gangs (Huizinga et al., 1995).

A high proportion of gang members are also involved in drug sales and possessing/carrying a gun, two behaviors closely linked to serious violence. The 1999 National Youth Gang Survey (a national survey of law enforcement agencies) estimates that 46 percent of youth gang members are involved in street drug sales (Egley, 2000). In the Rochester study, 67 percent of youths reporting they owned/carried a gun for protection were gang members and 32 percent reported they sold drugs. Only 3 to 7 percent of non–gun owners or sport gun owners were involved in drug selling. Further, 85 percent of youths who owned guns for protection were involved with peers who owned guns for protection (Huizinga et al., 1995).

Rates of violence are higher in schools where gangs are present. The rate of victimization in schools with gangs is 7.5 percent, compared to 2.7 percent in schools without gangs (Snyder & Sickmund, 1999). Gangs are present not only in inner-city schools, but in many suburban and rural schools as well. Between 1989 and 1995, the proportion of students reporting gangs at their school increased from 15 percent to 28 percent (Snyder & Sickmund, 1999). By 1999, however, that figure had dropped to 17 percent (Kaufman et al., 2000). A decline in the number of gangs in U.S. schools between 1996 and 1997 has also been reported by law enforcement agencies (National Youth Gang Center, 1999).

The National Youth Gang Survey reported more than 26,000 active youth gangs in schools and communities in 1999, down 15 percent from 1996 (Egley, 2000). Yet the same survey reported more than 840,500 active gang members in 1999, a decline of less than 1 percent from the peak level in 1996. Thus, from this source, it appears that the number of youths actively involved in gangs remains very high.

The racial/ethnic composition of gangs in 1999 was 47 percent Hispanic, 31 percent African American, 13 percent non-Hispanic white, and 7 percent Asian. These rates have been relatively constant since 1990.

In 1998, 92 percent of all gang members were male (National Youth Gang Center, 2000), although some evidence indicated that girls' involvement in gangs increased during the epidemic (Chesney-Lind et al., 1996; Chesney-Lind & Brown, 1999; Snyder & Sickmund, 1999). However, the National Youth Gang Survey reports a decline in female membership, with less than 2 percent of gangs nationwide reporting predominantly female membership.

CONCLUSIONS

The United States suffered an epidemic of violence in the decade from about 1983 to 1993. Arrest rates of young people for homicide and other violent crimes skyrocketed. Several other violence indicators confirmed an epidemic of violence during that period.

There are three factors that appear to play a significant role in this dramatic surge in lethal violence or injury: gangs, drugs, and guns. The combination of increased involvement in gangs, selling drugs on the street, and carrying guns for protection had lethal implications. And it was African American and Hispanic males who were disproportionately caught up in this set of circumstances.

After 1993/1994, arrests and victims' reports of violence began to decline, returning in 1999 to rates only slightly higher than those in 1983. These declines come as welcome news. Yet several other leading indicators of violence remain high. Young people's self-reports of violence have not declined at all. Arrest rates for aggravated assault remain quite high. Some estimates of gang membership indicate that this problem remains close to levels at the peak of the epidemic. Indeed, self-reported violent behavior is at least as high today as it was in 1993. Why has this important indicator of violence remained high while other indicators have come down?

A major reason is firearms usage. It is now clear that the violence epidemic was caused largely by an upsurge in the use of firearms by young people. Ready access to firearms during a violent confrontation often had grievous consequences. Youth violence became more lethal, resulting in dramatically higher rates of homicide and serious injury. This triggered reporting to and response from police, leading to higher rates of arrest. Although firearm usage may not cause violence, it clearly increases the severity of violence.

Today's youth violence is less lethal, largely because of a decline in the use of firearms. Fewer young people today are carrying weapons, including guns, and fewer are taking them to school. Homicides at school are declining. Violent confrontations are less likely to result in killing or serious injury, and the police are less likely to be called in for an arrest.

This is a heartening trend, but this is not the time for complacency. Violent behavior is just as prevalent today as it was during the violence epidemic. Some 10 to 15 percent of high school seniors reveal in confidential surveys that they have committed at least one act of serious violence in the past year. This prevalence rate has been slowly yet steadily rising since 1980.

There is also a difference by sex in the volume of violence. Male youths commit many more violent acts than female youths, according to both arrest records and self-reports. The existence of a racial difference between African American and white youths is more questionable. Arrest records indicate that many more African American than white youths commit violent crimes, whereas self-reports indicate much smaller racial differences in incident rates and nonexistent differences in prevalence rates. The disparities between these two indicators of violence have not been satisfactorily investigated, and more research on them is clearly warranted.

Looking at all self-reported violent behavior, it is apparent that youth violence still poses a serious public health problem. Should firearms once again become appealing and accessible to young people, the potential for a recurrence of the violence epidemic is quite real. The magnitude of serious violence occurring beneath the police radar should warn us that youth violence is a persistent problem demanding a focus on prevention.

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APPENDIX 2–A

Number, percent, and rates of nonfatal firearm-related injuries of youths age 10–19 treated in hospital emergency departments, 1993–1998*

Characteristic	Year	Number	Percent	Rate	95% CI**
All Youths	1993	21,049	76.1	58.7	28.7–88.7
	1994	18,327	78.4	50.3	24.6–76.0
	1995	17,419	74.3	47.0	23.0–71.0
	1996	13,488	69.6	35.8	17.4–54.2
	1997	13,508	77.0	35.3	16.2–54.5
	1998	11,791	74.7	30.4	13.7–47.1
Males	1993	18,736	76.8	101.8	49.4–154.2
	1994	16,366	78.0	87.5	42.3–132.7
	1995	15,343	73.9	80.7	39.0–122.4
	1996	11,853	68.2	61.3	29.5–93.1
	1997	12,036	76.9	61.3	36.9–95.8
	1998	10,174	75.0	51.1	22.6–79.6

* Data are displayed in Figure 2–4.

** CI = confidence interval.

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CHAPTER 3

THE DEVELOPMENTAL DYNAMICS OF YOUTH VIOLENCE

Most violence begins in the second decade of life. This chapter looks closely at childhood and adolescence as critical periods of development to trace how violence unfolds—its onset, duration, and continuity into adulthood. It also examines violence in relation to other risky behaviors that emerge in adolescence.

The dynamics of youth violence are best understood from a developmental perspective, which recognizes that patterns of behavior change over the life course. Adolescence is a time of tumultuous change and vulnerability, which can include an increase in the frequency and means of expression of violence and other risky behaviors. Understanding when and under what circumstances violent behavior typically occurs helps researchers craft interventions that target those critical points in development.

Our understanding of developmental patterns depends in large part on longitudinal studies, which track the same group of individuals over long periods of time, sometimes a decade or more. Four major longitudinal studies are described in this chapter. They add new dimensions to the surveillance statistics presented in Chapter 2, and they provide essential background for Chapter 4, which deals with *why* young people become involved in violence.

EARLY- AND LATE-ONSET TRAJECTORIES

Longitudinal research has detected two prominent developmental trajectories for the emergence of youth violence, one characterized by an early onset of violence and one by a late onset. Children who commit their first serious violent act before puberty are in the early-onset group, whereas youths who do not become violent until adolesence are in the late-onset group. While other developmental trajectories have been identified (D'Unger et al., 1998; Nagin & Tremblay, 1999), this report focuses on the early- and late-onset trajectories because they are recognized by most researchers, they debunk the myth that all serious violent offenders can be identified in early childhood, and they have strikingly different implications for prevention.

In the early-onset trajectory, problem behavior that begins in early childhood gradually escalates to more violent behavior, culminating in serious violence before adolescence. A child's first serious violent act may have been officially recorded, or it may have been reported by the child to researchers in a confidential survey. The early-onset group, in contrast to the late-onset group, is characterized by higher rates of offending and more serious offenses in adolescence, as well as by greater persistence of violence from adolescence into adulthood (reviewed in Stattin & Magnusson, 1996, and Tolan & Gorman-Smith, 1998). The National Youth Survey shows that nearly 13 percent of male adolescents in the early-onset trajectory engaged in violence for two or more years, compared to only 2.5 percent in the late-onset trajectory (Tolan & Gorman-Smith, 1998).

Between 20 and 45 percent of boys who are serious violent offenders by age 16 or 17 initiated their violence in childhood (D'Unger et al., 1998; Elliott et al., 1986; Huizinga et al., 1995; Nagin & Tremblay, 1999; Patterson & Yoerger, 1997; Stattin & Magnusson, 1996). A higher percentage of girls who were serious violent offenders by age 16 or 17 (45 to 69 percent) were violent in childhood

(Elliott et al., 1986; Huizinga et al., 1995). This means that most violent youths[1] begin their violent behavior during adolescence. However, the youths who commit most of the violent acts, who commit the most serious violent acts, and who continue their violent behavior beyond adolescence begin during childhood (Loeber et al., 1998; Moffitt, 1993; Tolan, 1987; Tolan & Gorman-Smith, 1998).

The greater prevalence of late-onset youth violence refutes the myth that all serious violent offenders can be identified in early childhood. In fact, the majority of young people who become violent show little or no evidence of childhood behavioral disorders, high levels of aggression, or problem behaviors—all predictors of later violence.

The implications of these findings for prevention are clear: Programs are needed to address both early- and late-onset violence. Targeting prevention programs solely to younger children with problem behavior misses over half of the children who will eventually become serious violent offenders, although universal prevention programs in childhood may be effective in preventing late-onset violence (see Chapters 4 and 6).

ONSET AND PREVALENCE OF SERIOUS VIOLENCE

Much of what is known about the onset, prevalence, and other characteristics of serious violence during the adolescent years comes from four important longitudinal surveys. The only nationally representative one is the National Youth Survey (NYS), an ongoing study of 1,725 youths age 11 to 17 in 1976, when the survey began (Elliott, 1994). These youths have been tracked by researchers for more than two decades and through nine waves, or points at which they were interviewed and/or their official records were sought to corroborate self-reported violence.[2]

The other three longitudinal studies cited here are city surveys sponsored by the U.S. Office of Juvenile Justice and Delinquency Prevention and the National Institutes of Health (Huizinga et al., 1995; Thornberry et al., 1995).[3] Beginning in 1988, three teams of researchers began to interview 4,500 youths age 7 to 15 in three cities—Denver, Pittsburgh, and Rochester (New York). These youths were monitored at different points from 1988 to 1994. Each sample disproportionately represents youths at high risk of delinquency to ensure that it is large enough to draw valid conclusions about delinquency and violence, but each also uses weighting procedures to yield locally representative estimates. The estimates presented here are based on weighted data.

These four surveys define serious violence as aggravated assault, robbery, gang fights, or rape; an individual is labeled a serious violent offender if he or she reports committing any one or more of these offenses.[4] Gang fights are included because follow-up information on these fights reveals that most of them involve injury serious enough to require medical attention (Elliott, 1994).

Only the NYS reports the hazard rate for serious violence during the first two decades of life.[5] The hazard rate is the proportion of persons who initiate serious violence at a given age. Serious violence begins mostly between the ages of 12 and 20 (Figure 3–1). In fact, 85 percent of people who become involved in serious violence by age 27 report that their first act occurred between age 12 and 20. The onset of serious violence is negligible after age 23 and before age 10 (only 0.2 percent of arrests for serious violent crime in 1997 involved a child under age 10 [Maguire & Pastore, 1999]).

The peak age of onset is 16, when about 5 percent of male adolescents report their first act of serious violence. The age of onset peaks somewhat later for

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[1] A higher proportion of serious violent offenders are male (Chapter 2).

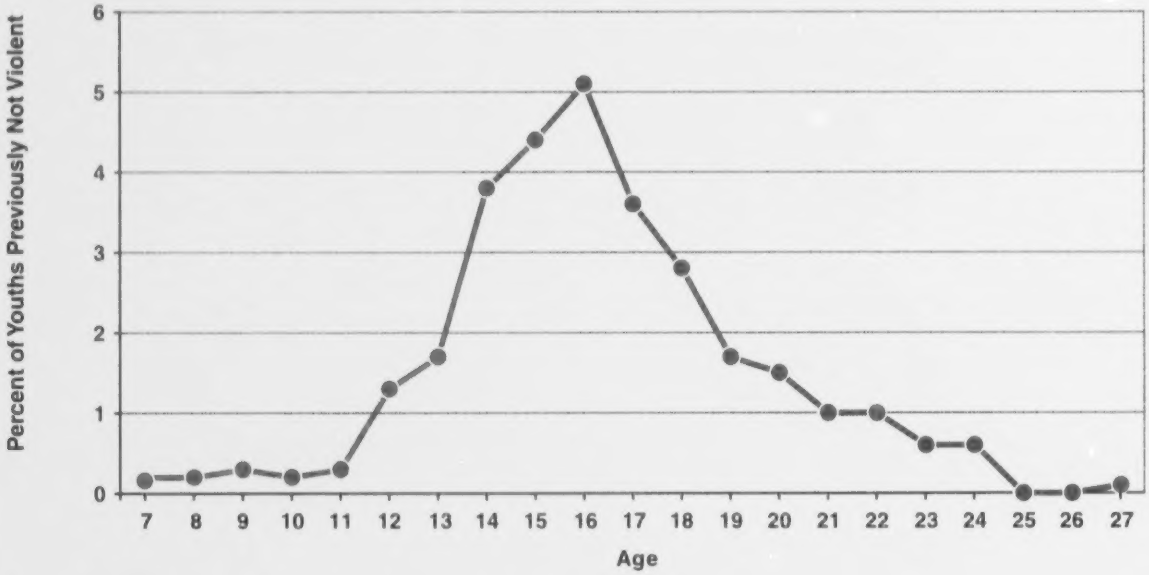
[2] Several other national longitudinal youth surveys are in progress, but none of them has tracked a sample long enough to provide descriptions of developmental trajectories in adolescence.

[3] Confidence intervals for all four surveys are based on simple binomial distributions and do not reflect the full sampling designs of these studies.

[4] In each survey, follow-up questions were asked to determine the seriousness and appropriateness of the reported event. Reports of nonserious events were not included. This adjustment could not be made for the first 3 years of the NYS, so for those years at least two serious violent offenses were required for a youth to be classified as a serious violent offender.

[5] The rates for age 10 and under are based entirely upon retrospective reports and may not be as reliable as those for age 11 and older.

Figure 3–1. Hazard rate for initiating serious violence, by age, National Youth Survey



Source: Elliott, 1994. 95% confidence intervals are all less than or equal to ± 1.0%.

white males (age 18) than for African American males (age 15). The hazard rate at the peak age also varies somewhat by race/ethnicity. It is lower for white males (5 percent) than for African American males (8 percent) (Elliott, 2000a). A similar finding is reported in the Pittsburgh Youth Survey (Huizinga et al., 1995).[6] No comparable hazard rates have been published for female youths, but other studies have found that they are generally lower.[7]

Age-specific prevalence—that is, the proportion of youths at any given age who report having committed at least one serious violent act—is also greatest in the second decade of life. The NYS and the three city surveys find that, broadly speaking, age-specific prevalence among male youths ranges from about 8 to 20 percent between the ages of 12 and 20 (Figure 3–2). Among females, it ranges from 1 to 18 percent (Table 3–1). There is some variability across surveys, however. In general, the NYS has lower rates than the three city surveys, reflecting the difference between a national sample and local samples drawn from urban areas. The differences may also reflect the timing of the studies. NYS estimates cover the years 1976 to 1986, whereas the three city surveys cover the years 1986 or 1988 to 1994, the peak years of the violence epidemic (see Chapter 2). Nevertheless, the estimates for age 17 across these longitudinal surveys are in the same range as those for high school seniors in the Monitoring the Future survey (see Chapter 2).

Another key difference between the national and city surveys is the maturation effect, or the age at which serious violence begins to decline sharply during the transition to adulthood. The NYS shows a decline in age-specific prevalence starting in the late teen years and a steep drop-off by age 20. In contrast, the city surveys, which were begun more recently, do not show a decline in the late teen years (Huizinga et al., 1995), and they have not yet published data on prevalence in early adulthood. Therefore, it is too soon to tell whether or at what age more recent groups of youths will mature out of violence. It is possible that young people are staying violent longer.

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[6] The actual hazard rates are not presented, but the investigators note that the rates were higher for African Americans between the ages of 12 and 16 (Huizinga et al., 1995).

[7] Using a slightly different definition of serious violent offender (three or more serious violent offenses), the hazard rate for females peaked at age 14 (1.5 percent ± 1.0 percent) and dropped by age 17 (0.6 percent ± 0.5 percent) (Elliott et al., 1986).

Table 3–1. Prevalence of serious violence by age, sex, and race/ethnicity: four longitudinal surveys

Age	Male								Female					
	NYS		DYS		PYS		RYDS		NYS		DYS		RYDS	
	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**
10	--	--	.02	.02	.07	.02	--	--	--	--	.01	.01	--	--
11	--	--	.05	.02	.11	.02	--	--	--	--	.02	.01	--	--
12	.12	.04	.08	.03	.08	.02	.19	.04	.06	.03	.03	.02	.15	.06
13	.10	.03	.10	.03	.17	.02	.16	.03	.07	.03	.06	.02	.18	.05
14	.10	.03	.12	.04	.17	.02	.22	.03	.05	.02	.07	.03	.18	.05
15	.12	.03	.15	.03	.15	.02	.19	.03	.06	.02	.07	.03	.13	.05
16	.12	.02	.18	.05	.13	.03	.17	.03	.03	.01	.05	.03	.06	.03
17	.12	.02	.18	.05	.17	.03	.17	.03	.03	.01	.04	.03	.04	.03
18	.11	.02	.19	.07	--	--	.20	.05	.01	.01	.03	.03	.07	.05
19	.08	.02	.21	.07	--	--	--	--	.01	.01	.01	.02	--	--
20	.07	.02	--	--	--	--	--	--	.01	.01	--	--	--	--
21	.06	.02	--	--	--	--	--	--	.01	.01	--	--	--	--

Age	African American										Hispanic				White									
							Male Only														Male Only			
	NYS		DYS		RYDS		NYS		PYS		DYS		RYDS		NYS		DYS		RYDS		NYS		PYS	
	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**	Rate*	95% CI**
10	--	--	.02	.02	--	--	--	--	.08	.02	.01	.01	--	--	--	--	.00	.00	--	--	--	--	.05	.02
11	--	--	.05	.03	--	--	--	--	.13	.03	.04	.02	--	--	--	--	.02	.03	--	--	--	--	.08	.02
12	.08	.06	.07	.04	.21	.05	.11	.10	.11	.04	.06	.03	.14	.08	.09	.03	.03	.04	.05	.05	.12	.04	.05	.02
13	.10	.06	.07	.03	.23	.04	.08	.07	.20	.03	.07	.03	.12	.06	.08	.02	.03	.04	.05	.04	.10	.03	.10	.03
14	.12	.08	.11	.04	.25	.04	.18	.08	.20	.03	.11	.04	.14	.06	.06	.02	.03	.05	.08	.05	.08	.03	.14	.05
15	.14	.05	.13	.04	.20	.03	.18	.08	.17	.03	.12	.04	.18	.06	.08	.02	.02	.03	.07	.05	.11	.03	.12	.03
16	.13	.05	.14	.05	.13	.03	.18	.07	.19	.05	.12	.04	.10	.05	.07	.01	.01	.03	.09	.05	.11	.03	.04	.02
17	.11	.04	.15	.05	.10	.03	.17	.07	.19	.05	.10	.04	.20	.07	.07	.01	.01	.03	.05	.04	.11	.02	.11	.04
18	.08	.04	.15	.08	.15	.04	.12	.06	--	--	.07	.05	.14	.08	.06	.01	.01	.04	.19	.10	.10	.05	--	--
19	.08	.03	.13	.07	--	--	.08	.05	--	--	.12	.06	--	--	.04	.01	.00	.00	--	--	.08	.02	--	--
20	.05	.03	--	--	--	--	.08	.05	--	--	--	--	--	--	.04	.01	--	--	--	--	.07	.02	--	--
21	.03	.03	--	--	--	--	.02	.03	--	--	--	--	--	--	.04	.01	--	--	--	--	.07	.02	--	--

Sources: Data for the three city surveys, Denver (DYS), Pittsburgh (PYS), and Rochester (RYDS), are from Huizinga et al. (1995); the Pittsburgh sample involves males only. Data for the National Youth Survey (NYS) are from Elliott et al. (1998) (sex) and Elliott (2000a) (race by sex).

* Rate per 100 youths in the general population.

** CI = confidence interval.

Some important differences in age-specific prevalence by sex have emerged from the data (Table 3–1). Female adolescents have lower rates of serious violence throughout the second decade. For the NYS and Denver surveys, rates at age 12 are about twice as high for boys as for girls. Between age 12 and 15 in Rochester, the rates are fairly similar. For all studies, the rates for females at age 17 are about one-quarter the rates for males. In addition, the peak age of serious violent offending occurs a few years earlier among females, and their maturation out of serious violence is both earlier and steeper than males'.

Age-specific prevalence also varies by race/ethnicity (Table 3–1). The NYS finds a significant racial gap between ages 14 and 17, when rates for African American youths are 36 to 50 percent higher than those for white youths. The city surveys show an even wider gap between African American and white youths (Huizinga et al., 1995). Rates among Hispanic youths, reported only for Denver and Rochester, are similar to or lower than those reported by African American youths in these cities. The prevalence reported by Hispanic youths ranges from 6 to 12 percent in Denver and about 10 to 20 percent in Rochester. Possible reasons for developmental differences by sex, race, and ethnicity are discussed in Chapter 4. None of these comparisons takes into account the effects of poverty, education, housing, or other environmental conditions.

CUMULATIVE PREVALENCE

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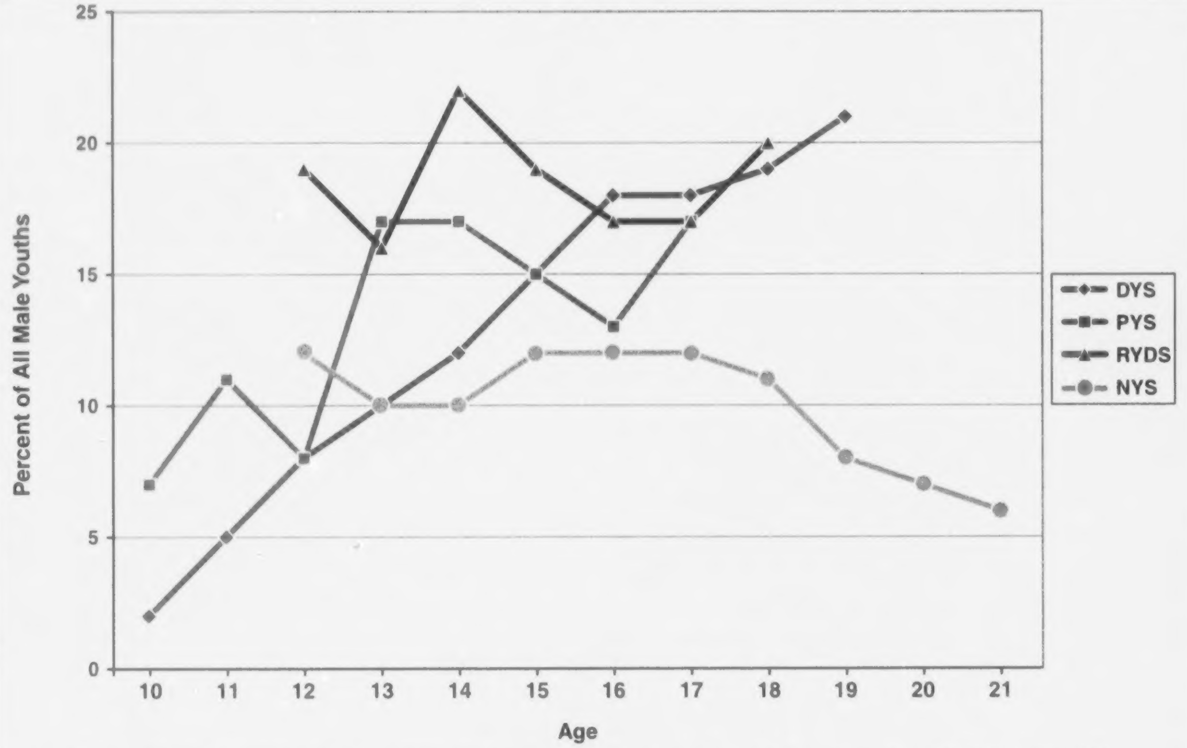
Figure 3–2. Prevalence of serious violence among male youths, by age: four longitudinal surveys



Sources: Denver Youth Survey (DYS), Pittsburgh Youth Study (PYS), Rochester Youth Development Study (RYDS): 1986–1999 (Huizinga et al., 1995); National Youth Survey (NYS): 1976–1993 (Elliott et al., 1998).

Cumulative prevalence refers to the proportion of youths at any particular age who have ever committed a serious violent offense.* As a measure of violence, it tends to equalize rather than magnify differences across populations because it counts youths only once, regardless of when or how often they engaged in violent acts.

The most striking feature of the cumulative prevalence is its sheer magnitude: About 30 to 40 percent of male and 16 to 32 percent of female youths have committed a serious violent offense by age 17 (Figure 3–3). Although these rates are only slightly higher than those found in international studies, they represent a more serious set of offenses (Junger-Tas et al., 1994).

The cumulative prevalence of youth violence is generally consistent across the four surveys. For male youths, the NYS shows it rising to about 40 percent and then leveling off beyond age 22. In the city surveys, it reaches more than 40 percent of male and 32 percent of female youths by age 17. Not only is the rise in cumulative prevalence by age 17 steeper in the city surveys, the magnitude is substantially higher.

These differences between a nationally representative sample and city samples are to be expected. The timing of the surveys may also explain some of the differences. For example, 17-year-olds in the NYS were interviewed at some point between 1976 and 1982, whereas 17-year-olds in the city surveys were interviewed at some point between 1988 and 1994, the era during which the self-reported prevalence of serious youth violence increased somewhat (see Chapter 2).

There is a pronounced difference in cumulative prevalence by sex. Among 17-year-olds, the Denver

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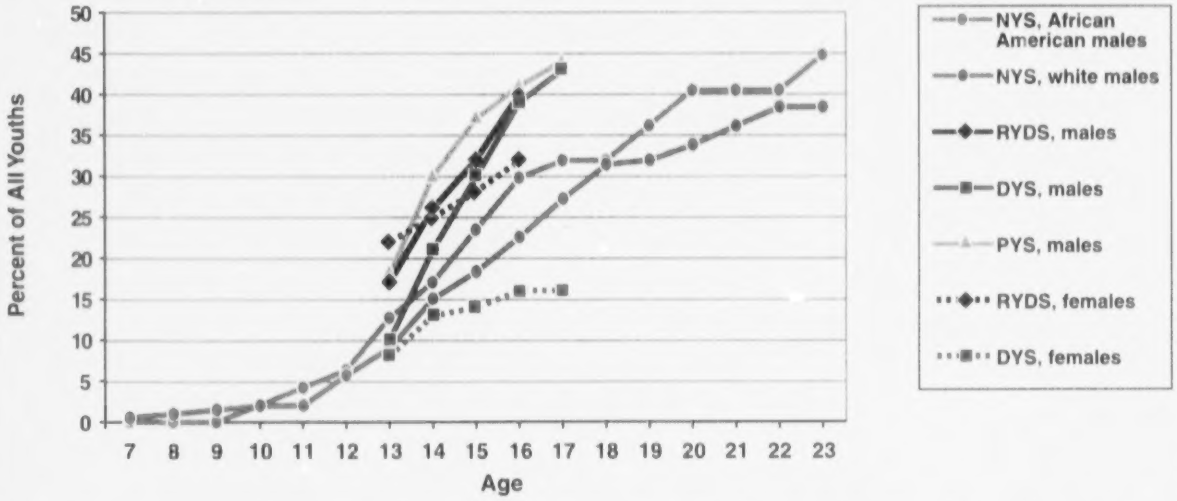
* Cumulative prevalence is also known as lifetime prevalence or ever-prevalence to a given age.

Figure 3–3. Cumulative prevalence of serious violence, by age, sex, and race: four longitudinal surveys



Sources: National Youth Survey (NYS), 1976–1993 (Elliott, 1994); Rochester Youth Development Study (RYDS), 1986–1999; Denver Youth Survey (DYS), 1986–1999; Pittsburgh Youth Study (PYS), 1986–1999 (Huizinga et al., 1995). Confidence intervals are as follows: NYS African American males = .45 (± 9.8); NYS white males = .38 (± 3.9); RYDS males = .40 (± 3.7); DYS males = .43 (± 3.6); PYS males = .44 (± 2.6); RYDS females = .32 (± 6.1); DYS females = .16 (± 2.8).

survey found a cumulative prevalence of 16 percent for female youths and 43 percent for male youths, whereas the Rochester survey showed 32 percent and 40 percent, respectively. Data on cumulative prevalence for females are not available in the Pittsburgh survey or the NYS.[9]

On the other hand, there are few differences in cumulative prevalence by race over the teen years, according to the NYS. By age 23, white males had a cumulative prevalence of 38 percent and African American males had a cumulative prevalence of 45 percent, a difference that is not statistically significant (Figure 3–3).

RATES OF OFFENDING AND VIOLENT CAREERS

Violent youths commit a remarkably high number of crimes (Tolan & Gorman-Smith, 1998). An analysis of NYS data shows that these young people (both male and female) averaged 15.6 rapes, robberies, aggravated assaults, or some combination of these crimes over a 16-year period (1976 to 1992) (Elliott, 2000b). What's more, they averaged just over six serious violent offenses each during the years in which they were active (Elliott, 2000b).[10] This mean annual rate of offending is similar to rates reported in the three city surveys for males (about 5 to 9 serious violent offenses per year) (Huizinga et al., 1995) but much higher than the rates for females (2 to 4.5 per year).

It is noteworthy that the mean annual rate of individual offending appears to be essentially unchanged over the past two decades. This finding is corroborated by a study of trends among juvenile offenders processed by a county court system in Arizona (Snyder, 1998) and by an analysis of both National Crime Victimization Survey data and arrest records (Snyder & Sickmund, 2000). Finally, the Monitoring the Future survey (see Chapter 2) found no significant changes in individual offending rates for robbery or assault with injury between 1983 and 1993.[11]

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[9] The NYS reports an 11 percent cumulative prevalence at age 21 among females who are chronic (committing three or more offenses per year) serious violent offenders.

[10] Active involvement is defined as any year during which offenders committed one or more serious violent offenses.

Career length has been variously defined as the number of years of active offending, the maximum number of consecutive years, or the span between the first and last year during which a young person meets the criteria for a serious violent offender (Blumstein et al., 1986). There are relatively few estimates of violent career lengths. In the NYS, the mean career length (number of years of active violent offending) was 2.6 years. The most frequent career length was 1 year (36.8 percent of serious violent offenders). Three-quarters of these serious violent youths had careers lasting 3 years or less, and 15 percent had careers of 5 years or more (Elliott, 2000b). Based on 5 years of data, the Denver survey reports that 42 percent of serious violent youths were active for only 1 year, 22 percent for 2 years, and 31 percent for 3 or more years (Huizinga et al., 1995).

The typical violent career comprises either a single year of continuous offending or a longer period of intermittent offending. Relatively few violent careers are characterized by years of uninterrupted violence. In Denver, well over half of the careers that lasted three or more years had at least one year with no violent offending; three-quarters of those that spanned a 5-year period had an intermittent pattern of offending (Thornberry et al., 1995). Evidence that most careers lasting more than 1 year were characterized by intermittent offending also surfaced in the NYS (Elliott et al., 1986). This intermittent pattern makes it difficult to identify serious violent offenders with cross-sectional studies or with longitudinal studies that have long periods between data collection (Huizinga et al., 1995).

In sum, these studies suggest that in most cases violent careers are relatively short and are characterized by intermittent offending. During active periods, however, most careers are marked by a high rate of violent offending—up to 10 offenses per year (Elliott et al., 1986; Thornberry et al., 1995).

DEVELOPMENTAL PATHWAY TO VIOLENCE

Violent youths do not usually begin their careers with a serious violent offense. While the developmental pathway varies, depending on what types of behavior are monitored, studies generally agree that a violent career begins with relatively minor forms of antisocial or delinquent behavior. These acts later increase in frequency, seriousness, and variety, often progressing to serious violent behavior (Elliott, 1994; Loeber et al., 1998; Moffitt, 1993; Tolan & Gorman-Smith, 1998). Several complex pathways to serious violence have been proposed (Loeber, 1996; Elliott, 1994).

The NYS suggests that violence escalates over time. Most serious violent youths who engage in multiple types of violent behavior begin with aggravated assault, then add a robbery, and finally a rape. (Rape appears to be the endpoint of the progression, although there were not enough homicides in the NYS sample to include homicide in the analysis.) Robbery precedes rape in over 70 percent of cases in which both acts have been reported, and about 15 percent of serious violent offenders in the NYS reported having committed a rape (Elliott, 1994, 2000a). This sequence must be considered tentative because it is based on a single study.

When serious violence becomes part of a youth's repertoire of antisocial behavior, it does not substitute for less serious forms of violence; rather, it adds to them and escalates the overall frequency of violent acts. Thus, serious violent youths are high-frequency offenders who are involved in many less serious as well as serious offenses. These youths account for a major share of all criminal behavior, a pattern that is explored more fully in the next section.

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[11] Calculations were done by the senior scientific editor Elliott on the basis of Monitoring the Future prevalence and frequency data on aggravated assault and robbery contained in the 1991 and 1998 Sourcebooks of Criminal Justice Statistics (Flanagan & Maguire, 1992; Maguire & Pastore, 1999). Individual offending rates are based on estimated incident rates. For this calculation, frequencies associated with categorical scores were as follows: not at all = 0; once = 1; twice = 2; 3 or 4 times = 3.5; and 5 or more times = 5. Individual offending rates for robbery in both 1983 and 1993 were 1.8. Rates for assault with injury were 2.3 and 2.6 (not significant). The mean individual offending rate can remain relatively constant despite increases in prevalence and incident rates noted in Chapter 2.

CHRONIC VIOLENT OFFENDERS

A minority of serious violent youths are responsible for the overwhelming majority of serious violent crime, a finding supported by numerous self-report and arrest studies (Tolan & Gorman-Smith, 1998; Tracy & Kempf-Leonard, 1996). In the city surveys, chronic offenders, though representing less than 20 percent of all serious violent offenders, accounted for 75 to 80 percent of self-reported violent crimes (Huizinga et al., 1995). NYS data yield similar findings: Chronic offenders (youths with three or more violent offenses) accounted for 76 percent of all felony assaults and 89 percent of all robberies reported by offenders in 1980 (Elliott et al., 1989).

Chronic violent youths may also account for a disproportionate share of all youth crime. The NYS reveals that in 1980 these serious violent offenders accounted for 79 percent of all felony theft, 66 percent of all illegal services (primarily drug selling), and 50 percent of all self-reported crime (Elliott et al., 1989). In the Philadelphia Birth Cohort Study, 15 percent of youthful offenders accounted for 74 percent of all official crime (Tracy & Kempf-Leonard, 1996).

As noted earlier, youths whose violence begins before puberty are more likely to become chronic violent offenders (Loeber et al., 1998). In the Rochester survey, 39 percent of children who initiated violent behavior by age 9 eventually became chronic offenders, 30 percent of those who initiated violence between the ages of 10 and 12 became chronic offenders, and 23 percent of those who initiated violence after age 13 became chronic violent offenders. In Denver, 62 percent of those initiating violence by age 9 and 48 percent of those initiating violence between 10 and 12 became chronic violent offenders. Looking at this another way, 55 percent of all chronic violent offenders in Denver came from the early-onset trajectory (Thornberry et al., 1995). While the late-onset trajectory involves a substantially larger group of youths, fewer than half of all chronic offenders come from this group.

Although most chronic violent offenders in the three city surveys (62 to 77 percent) eventually had contact with the police for some offense (though not necessarily a violent offense), one-quarter to one-third were never arrested (Huizinga et al., 1995). Among those who were arrested for some offense, the first contact came well after they had begun their violent careers. Interventions by the justice system occur too late to prevent such youths from escalating from less serious offenses to serious violence. Fortunately, it appears that at least half of chronic violent offenders can be identified as being at risk in childhood.

Research has found a powerful relationship between membership in a gang and chronic involvement in serious violence (see review in Thornberry, 1998). As noted earlier (see Chapter 2), gang members, a relatively small proportion of the adolescent population, commit the majority of serious youth violence (see Spergel, 1990, and Thornberry, 1998, for reviews).

SUPERPREDATORS?

Between 1983 and 1993, adolescents were committing homicide at dramatically higher rates than in previous years (see Chapter 2). Did those youths represent a new breed of frequent, vicious, remorseless killers? Did the character of violent youths change during that time—and is it still different today (Bennett et al., 1996)? The answer seems to be no, for several reasons.

First, the increase in homicides was similar across all age groups (see Chapter 2). This suggests that it resulted from a relatively sudden change in the environment that affected all youths rather than from a gradual change in the socialization process, which would have led to progressively more vicious youths with each succeeding age group. Second, the increase in homicides was highly specific to certain youths—namely, African American males (Zimring, 1998); moreover, it did not take place among females (see Chapter 2). Third, during the violence epidemic, there was a decline in family members killed by youths (Cook & Laub, 1998).

Fourth, a new breed of superpredators should have resulted in more burglaries, auto thefts, and larcenies, but no such increases occurred (Cook & Laub, 1998). It should also have resulted in more homicides involving knives and other weapons, but this did not occur (Zimring, 1998). Fifth, there was no evidence that individual rates of serious violent crime changed during the epidemic. More youths were involved, but the average number of offenses committed by each did not change. Finally, there may be anecdotal evidence that today's youths show less remorse for their violence, but this has not been substantiated by research.

In sum, the epidemic of violence from 1983 to 1993 does not seem to have resulted from a basic change in the offending rates and viciousness of young offenders. Rather, it resulted primarily from a relatively sudden change in the social environment—the introduction of guns into violent exchanges among youths. The violence epidemic was, in essence, the result of a change in the presence and type of weapon used, which increased the lethality of violent incidents (Wintemute, 2000).

CO-OCCURRING PROBLEM BEHAVIORS

Serious violence is accompanied by a wide range of other problem behaviors, including property crimes, substance use, gun ownership, dropping out of school, early sexual activity, and reckless driving. The co-occurrence of these problem behaviors has been borne out by numerous national and local studies (see reviews in Elliott, 1993; Huizinga & Jakob-Chen, 1998; Tolan & Gorman-Smith, 1998).

The overlap is greatest between serious violence and other forms of crime. In the three city surveys, 82 to 92 percent of chronic violent youths were involved in property crimes, 71 to 82 percent in public disorder crimes, and 26 to 45 percent in selling drugs (Huizinga et al., 1995). Very similar rates were found in the NYS (Elliott et al., 1989). Rates of co-occurrence were much higher among serious violent youths than among less violent youths.

Substance use and abuse are a central feature of a violent lifestyle (Dembo et al., 1991; Elliott, 1994; Elliott et al., 1989; Esbensen & Huizinga, 1991; Fagan, 1993; Johnson et al., 1991). In the Denver survey, for example, about 58 percent of serious violent offenders were alcohol users and 34 percent were marijuana users. The prevalence and frequency of use were much lower in youths who were not seriously violent (Huizinga & Jakob-Chen, 1998). The NYS indicates that 94 percent of serious violent youths in 1980 were using alcohol, 85 percent were using marijuana, and 55 percent were using several illicit drugs. Over half (55 percent) were abusing drugs—that is, they reported health or relationship problems, or both, associated with their drug use (Elliott et al., 1989).

Similar findings regarding the overlap of substance use and serious violence hold for the Rochester study (Thornberry et al., 1995). Moreover, chronic violent youths in Rochester and violent youths in the NYS had higher rates of dropping out of school, gun ownership and use, teenage sexual activity and parenthood, tobacco use, driving under the influence of alcohol or drugs, and gang membership than nonserious offenders or nonoffenders (Elliott, 1993; Thornberry et al., 1995).

In sum, these studies show that a sizable proportion of serious violent youths have co-occurring problem behaviors—and at rates significantly higher than those of their less violent counterparts. However, by no means all serious violent youths or even all chronic violent youths have co-occurring problems. Moreover, not all youths with problem behaviors are seriously violent. The fact that serious violence and problem behaviors tend to occur together does not necessarily mean that one causes the other (see Chapter 4) (Elliott, 1993; Reiss & Roth, 1993).

Violence and Mental Health

The relationship between violence and mental health has been studied more intensively in adults than in young people. An earlier U.S. Surgeon General's report on mental health, after weighing the evidence, emphasized that the contribution of mental disorders to overall violence in the United States is very small. In fact, public fear is out of proportion to the actual risk of violence, which contributes to the stigmatizing of people with severe mental disorders (Link et al., 1999). Even though the risk of violence is low overall, it is greatest for adults with serious mental disorders who also abuse substances (Steadman et al., 1998; Swanson, 1994).

Although violence is relatively widespread among adolescents, few studies have been undertaken on the co-occurrence of violence and mental health problems or disorders among U.S. adolescents. Such population-based studies are important because they avoid the bias inherent in surveying hospitalized patients or convicted offenders.

Both the NYS and the Denver survey examine the co-occurrence of serious violence and mental health problems. In the NYS, 28 percent of serious offenders age 11 to 17 were classified as having mental health problems, compared to 13 to 14 percent of nonserious delinquent youths and 9 percent of nonoffenders. Youths were classified as having mental health problems on the basis of their responses to questions about emotional problems, social isolation, and feelings of loneliness (Elliott et al., 1989). (The questions were not designed to arrive at a diagnosis of a mental disorder.) Serious violent offenders were more likely than either nonserious offenders or nonoffenders to report having these types of mental health problems.

In the Denver study, serious violent youths were found to have higher rates of psychological problems, based on parents' responses to the Child Behavior Checklist (Achenbach & Edelbrock, 1983). These problems included externalizing and internalizing behavior, depression, uncommunicativeness, obsessive-compulsive behavior, hyperactivity, social withdrawal, and aggressiveness. The rates at which most of these problems occurred in serious offenders were no different from the rates at which they occurred in nonviolent delinquent youths; however, rates in nondelinquent youths were lower. Thus, delinquent youths in general were more likely to have psychological problems than nondelinquent youths (Huizinga & Jakob-Chen, 1998).

Two problems were linked directly to violent behavior—externalizing symptoms and aggressive behavior. Approximately half of all serious violent offenders display these problems, although the link with externalizing behaviors is statistically significant only for boys. In addition, parents of violent offenders report seeking help for mental health problems more often than parents of nondelinquent or nonviolent delinquent youths. These parents did not go to mental health professionals or school counselors; rather, they sought the advice of friends, relatives, and spiritual leaders (ministers, rabbis, or priests). A similar finding is reported in the Pittsburgh study (Stouthamer-Loeber & Thomas, 1992).

The Denver study found no differences between the self-esteem of serious violent offenders and nonviolent offenders or nonoffenders (Huizinga & Jakob-Chen, 1998). In general, there is little evidence that low self-esteem causes violence or that violent offenders have low self-esteem. On the contrary, the evidence is more consistent with the position that high self-esteem and threats to high esteem lead to violence (Baumeister et al., 1996). This has important implications for treatment and intervention programs and the use of esteem-building activities in these programs.

A population-based study in New Zealand found that in young adulthood (age 21), serious violent offenders are more likely than nonoffenders to exhibit substance dependence disorders, schizophrenia-spectrum disorders,[12] or both (Arseneault et al., 2000). These New Zealand findings are consistent with the studies of U.S. adults showing that the greatest risk of violence stems from the combination of serious mental disorder and substance dependence. However, about 10 percent of serious violent offenders[13] in the New Zealand study exhibited schizophrenia-spectrum disorders without substance dependence or other psychiatric conditions. The researchers concluded that while the contribution of serious mental illness to violence in young adults remains small, it may be slightly higher than it is in adults. One possible reason for the difference is that the overwhelming majority of young adults with mental disorders in the New

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[12] This broad category includes individuals who responded "yes, definitely" when asked if they had positive symptoms of schizophrenia (hallucinations and delusions) and for whom other plausible explanations (such as major depressive episodes or the influence of alcohol or illicit drugs) could be ruled out. The classification of diagnoses was made with the Diagnostic Interview Schedule.

[13] Defined by two or more types of violent offenses (simple assault, aggravated assault, robbery, rape, and gang fighting) or a conviction.

Zealand study had not been treated or hospitalized within the previous year.

Another recent community-based study found a link between personality disorders (a group of severe mental disorders) and violence. Adolescents with personality disorders,[14] as determined by diagnostic interviews, were more likely than other adolescents to commit violent acts such as assault with injury and robbery (Johnson et al., 2000). For example, about 36 percent of adolescents with personality disorders versus 16 percent without the disorders committed a violent act against others[15] during adolescence. The relationship between personality disorders and violence remained after taking many factors into account, including co-occurring depression, anxiety, and substance disorders. Only a few adolescents (13 percent) with personality disorders had received mental health services during the previous year (Johnston, personal communication, 2000).

Thus, there is some evidence of a relationship between serious mental disorders and violence in adolescents or young adults in the general population. Young people with serious mental disorders may be at risk of becoming violent if they also abuse substances or if they have not received treatment for their mental disorder. More research is needed to understand the relationship between serious youth violence and mental illness.

OFFENDING AND VICTIMIZATION

Violent offenders are frequently victims of violence (Esbensen & Huizinga, 1991; Lauritsen et al., 1991; Sampson & Lauritsen, 1990, 1994). Data from the NYS reveal that victimization is highest among African Americans, males, and frequent offenders (Lauritsen et al., 1991). In addition, youths who report abusing drugs and alcohol, hanging out with delinquent peers, and participating in social activities with little adult supervision are at greater risk of being victims of violence (Gottfredson, 1984; Lauritsen et al., 1991; Sampson & Lauritsen, 1990). A delinquent lifestyle greatly increases the likelihood of being a victim and appears to account for some of the disparities observed in offending and victimization by race/ethnicity and sex. The Denver survey shows that 42 percent of serious violent offenders are also victims of violence (Huizinga & Jakob-Chen, 1998), with higher rates among male offenders than female offenders.

There are many reasons for the overlap between offending and victimization. Perhaps the most common is that the offender is injured by the intended target—either during the offense or later, in retaliation. Another reason is that offenders tend to live in more violent environments or their lifestyles take them into high-risk environments. The predictive relationship between victimization and offending, as well as the relationship with early child abuse, is discussed in Chapter 4.

TRANSITION TO ADULTHOOD

The transition from adolescence to adulthood features a fairly abrupt discontinuation of serious violence, at least according to the NYS. Rates of onset and age-specific prevalence show dramatic declines, and the cumulative prevalence levels off, as discussed above. Only about 20 percent of serious violent offenders continue their violent careers into their twenties (Elliott, 1994).

While there are no differences by sex in the apparent termination of violent offending, there are significant differences by race. Twice as many African American as white youths continue their violent behavior into the adult years (Elliott, 1994). Preliminary analyses suggest that cessation of offending is related to having a stable job and a stable intimate relationship.

By 1992, the most recent year for which data are available, many people monitored by the NYS had reached their late twenties and early thirties. There is virtually no published information about what patterns of violence may have continued into their adult years.

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[14] The personality disorders included in this study were the same disorders (e.g., schizotypal disorder) studied by Arseneault et al. (2000)

[15] Included threats to injure others, initiation of physical fights, mugging, robberies, or assaults resulting in injury during the past 1 to 4 years or during the individual's lifetime. The acts were reported in 1985–1986 or 1991–1993.

The more recent city surveys have published age-specific and cumulative prevalence findings only up to age 19, but these studies are still being conducted. Some evidence from these surveys (Figure 3–2) suggests that violent careers are lasting longer, but additional waves of data are needed to verify this trend.

Understanding the demographics and dynamics of how patterns of serious violence change with the transition into adulthood is critical to designing programs that enhance the termination of violence.

CONCLUSIONS

The prevalence of serious violence by age 17 is startling. About 30 to 40 percent of male and 15 to 30 percent of female youths report having committed a serious violent offense at some point in their lives. This cumulative prevalence is similar among African American and white males, in contrast to other measures of violence, which show racial disparities (see Chapter 2).

Two general onset trajectories emerge from longitudinal studies of youth violence—an early-onset trajectory that begins before puberty and a late-onset one that begins in adolescence. Youths in the early-onset trajectory generally commit more crimes, and more serious crimes, for a longer time. These young people exhibit a pattern of escalating violence through childhood and adolescence, and frequently into adulthood.

Most youths who become violent, however, begin in adolescence. Their late-onset offending is usually limited to a short period, peaking at about age 16 and dropping off dramatically by age 20. They typically show few signs in childhood that they will become violent later on, laying to rest the myth that all violent adolescents can be identified in childhood.

The rate of individual offending appears to have remained virtually unchanged, both during and since the years of the violence epidemic, which began in 1983 and peaked in 1993. This finding, together with evidence that the epidemic was specific to gun-related violence, challenges the myth that the early 1990s produced a generation of superpredators who were more vicious and who committed dramatically more crimes than earlier generations of young people. At the same time, the finding of a stable individual offending rate indicates that the violence epidemic has not altogether subsided.

Serious violence is frequently part of a lifestyle that includes drugs, guns, precocious sex, and other risky behaviors. Youths involved in serious violence typically commit many other types of crimes and exhibit other problem behaviors, presenting a serious challenge to intervention efforts. Successful interventions must confront not only the violent behavior of these young people, but also their lifestyles, which are teeming with risk.

Prevention and intervention programs must also take into account the different patterns of violence typical of the early- and late-onset trajectories, as well as the relatively constant rates of individual offending. Early childhood programs that target at-risk children and families are critical for preventing the onset of a chronic violent career, but programs must also be developed to combat late-onset violence. The importance of late-onset violence prevention is neither widely recognized nor well understood. Substantial numbers of serious violent offenders emerge seemingly without warning. A comprehensive community prevention strategy must address both onset patterns and ferret out their respective causes and risk factors.

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CHAPTER 4

RISK FACTORS FOR YOUTH VIOLENCE

Research has documented the magnitude of youth violence and the trends in that violence over time. But what do we know about *why* young people become involved in violence? Why do some youths get caught up in violence while others do not? There is no simple answer to these questions, but scientists have identified a number of things that put children and adolescents at risk of violent behavior and some things that seem to protect them from the effects of risk.

INTRODUCTION TO RISK AND PROTECTIVE FACTORS

The concepts of risk and protection are integral to public health. A risk factor is anything that increases the probability that a person will suffer harm. A protective factor is something that decreases the potential harmful effect of a risk factor. In the context of this report, risk factors increase the probability that a young person will become violent, while protective factors buffer the young person against those risks. The public health approach to youth violence involves identifying risk and protective factors, determining how they work, making the public aware of these findings, and designing programs to prevent or stop the violence.

Risk factors for violence are not static. Their predictive value changes depending on when they occur in a young person's development, in what social context, and under what circumstances. Risk factors may be found in the individual, the environment, or the individual's ability to respond to the demands or requirements of the environment. Some factors come into play during childhood or even earlier, whereas others do not appear until adolescence. Some involve the family, others the neighborhood, the school, or the peer group. Some become less important as a person matures, while others persist throughout the life span. To complicate the picture even further, some factors may constitute risks during one stage of development but not another. Finally, the factors that predict the onset of violence are not necessarily the same as those that predict the continuation or cessation of violence.

Violence prevention and intervention efforts hinge on identifying risk and protective factors and determining when in the course of development they emerge. To be effective, such efforts must be appropriate to a youth's stage of development. A program that is effective in childhood may be ineffective in adolescence and vice versa. Moreover, the risk and protective factors targeted by violence prevention programs may be different from those targeted by intervention programs, which are designed to prevent the reoccurrence of violence.

This report groups risk and protective factors into five domains: individual, family, peer group, school, and community, which includes both the neighborhood and the larger society (Box 4-1). Factors do not always fit neatly into these areas, however. Broken homes are classified as a family risk factor, but the presence of many such families in a community can contribute to social disorganization, an important community-level risk factor (Bursik & Grasmick, 1993; Elliott et al., 1996; Sampson & Lauritsen, 1994).

Risk Factors

Risk factors are not necessarily causes. Researchers identify risk factors for youth violence by tracking the development of children and adolescents over the first two decades of life and measuring how frequently particular personal characteristics and social conditions at a given age are linked to violence at later stages of

Box 4–1. Early and late risk factors for violence at age 15 to 18 and proposed protective factors, by domain

Domain	Risk Factor		Protective Factor*
	Early Onset (age 6–11)	Late Onset (age 12–14)	
Individual	General offenses Substance use Being male Aggression** Psychological condition Hyperactivity Problem (antisocial) behavior Exposure to television violence Medical, physical Low IQ Antisocial attitudes, beliefs Dishonesty**	General offenses Psychological condition Restlessness Difficulty concentrating** Risk taking Aggression** Being male Physical violence Antisocial attitudes, beliefs Crimes against persons Problem (antisocial) behavior Low IQ Substance use	Intolerant attitude toward deviance High IQ Being female Positive social orientation Perceived sanctions for transgressions
Family	Low socioeconomic status/poverty Antisocial parents Poor parent-child relations Harsh, lax, or inconsistent discipline Broken home Separation from parents Other conditions Abusive parents Neglect	Poor parent-child relations Harsh, lax discipline; poor monitoring, supervision Low parental involvement Antisocial parents Broken home Low socioeconomic status/poverty Abusive parents Other conditions Family conflict**	Warm, supportive relationships with parents or other adults Parents' positive evaluation of peers Parental monitoring
School	Poor attitude, performance	Poor attitude, performance Academic failure	Commitment to school Recognition for involvement in conventional activities
Peer Group	Weak social ties Antisocial peers	Weak social ties Antisocial, delinquent peers Gang membership	Friends who engage in conventional behavior
Community		Neighborhood crime, drugs Neighborhood disorganization	

* Age of onset not known.

** Males only.

the life course. Evidence for these characteristics and social conditions must go beyond simple empirical relationships, however. To be considered risk factors, they must have both a theoretical rationale and a demonstrated ability to predict violence—essential conditions for a causal relationship (Earls, 1994; Kraemer et al., 1997; Thornberry, 1998). The reason risk factors are not considered causes is that, in most cases, scientists lack experimental evidence that changing a risk factor produces changes in the onset or rate of violence.

As used in this report, risk factors are personal characteristics or environmental conditions that *predict* the onset, continuity, or escalation of violence.

The question of causality has practical implications for prevention efforts. Prevention depends large-

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ly on risk factors being true causes of violence. In practical terms, research has amassed enough strong, consistent evidence for the risk factors discussed in this report to provide a basis for prevention programs, even though a strict cause-and-effect relationship has been established for relatively few of them.

Most of the risk factors identified do not appear to have a strong biological basis. Instead, it is theorized, they result from social learning or the combination of social learning and biological processes. This means that violent youths who have violent parents are far more likely to have modeled their behavior on their parents' behavior—to have learned violent behavior from them—than simply to have inherited it from them. Likewise, society's differing expectations of boys and girls—expecting boys to be more aggressive, for example—can result in learned behaviors that increase or decrease the risk of violence.

The bulk of the research that has been done on risk factors identifies and measures their predictive value separately, without taking into account the influence of other risk factors. More important than any individual factor, however, is the accumulation of risk factors. Risk factors usually exist in clusters, not in isolation. Children who are abused or neglected, for example, tend to be in poor families with single parents living in disadvantaged neighborhoods beset with violence, drug use, and crime. Studies of multiple risk factors have found that they have independent, additive effects—that is, the more risk factors a child is exposed to, the greater the likelihood that he or she will become violent. One study, for example, has found that a 10-year-old exposed to 6 or more risk factors is 10 times as likely to be violent by age 18 as a 10-year-old exposed to only one factor (Herrenkohl et al., 2000).

Researchers have theorized that risk factors also interact with each other, but to date they have found little evidence of interaction. What evidence does exist suggests that interactions between or among factors produce only small effects, but work in this area is continuing. To date, much more research has been done on risk factors than protective factors, but that picture, too, is changing.

Developmental Progression to Violence

Scientific theory and research take two different approaches to how youth violence develops—one that focuses on the onset of violent behavior and its frequency, patterns, and continuity over the life course and one that focuses on the emergence of risk factors at different stages of the life course. Chapter 3 describes two developmental trajectories for the onset of violent behavior—one in which violence begins in childhood (before puberty) and continues into adolescence, and one in which violence begins in adolescence.

In contrast, this chapter considers the timing of risk factors. It identifies the individual characteristics, experiences, and environmental conditions in childhood or adolescence that predict involvement in violent behavior in late adolescence—that is, age 15 to 18, the peak years of offending. Research shows that different risk factors may emerge in these two developmental periods and that the same risk factors may have different effect sizes, or predictive power, in these periods.

The timing of risk factors and the onset of violence are connected. Only risk factors that emerge in early childhood can logically account for violence that begins before puberty. However, these early risk factors may or may not be implicated in violence that begins in adolescence. In fact, studies show that many youths with late-onset violence did not encounter the childhood risk factors responsible for early-onset violence. For these youths, risk factors for violence emerged in adolescence (Huizinga et al., 1995; Moffitt et al., 1996; Patterson & Yoerger, 1997; Simons et al., 1994).

Table 4–1 lists early and late risk factors and estimates their effect sizes for violence at age 15 to 18. It does not distinguish between youths who became violent before puberty and those who first became violent in adolescence; both groups are included among youths who were violent in late adolescence. However, the table does indicate that different risk factors emerge before puberty (age 6 to 11) and after puberty (age 12 to 14) and that the same risk factors have different effect sizes in these periods. Thus, for example,

Table 4–1. Effect sizes of early and late risk factors for violence* at age 15 to 18

Early Risk Factors (age 6–11)	Effect Size (*r* =)	Late Risk Factors (age 12–14)	Effect Size (*r* =)
Large Effect Size (*r* ≥ .30)			
General offenses	*.38*	Weak social ties	*.39*
Substance use	*.30*	Antisocial, delinquent peers	*.37*
		Gang membership	.31
Moderate Effect Size (*r* = .20 – .29)			
Being male	*.26*	General offenses	*.26*
Low family socioeconomic status/poverty	*.24*		
Antisocial parents	*.23*		
Aggression**	*.21*		
Small Effect Size (*r* < .20)			
Psychological condition	*.15*	Psychological condition	*.19*
Hyperactivity	*.13*	Restlessness	.20
Poor parent-child relations	*.15*	Difficulty concentrating**	.18
Harsh, lax, or inconsistent discipline	.13	Risk taking	.09
Weak social ties	*.15*	Poor parent-child relations	*.19*
Problem (antisocial) behavior	*.13*	Harsh, lax discipline; poor monitoring, supervision	.08
Exposure to television violence	*.13*	Low parental involvement	.11
Poor attitude toward, performance in school	*.13*	Aggression**	*.19*
Medical, physical	*.13*	Being male	*.19*
Low IQ	*.12*	Poor attitude toward, performance in school	*.19*
Other family conditions	*.12*	Academic failure	.14
Broken home	*.09*	Physical violence	*.18*
Separation from parents	.09	Neighborhood crime, drugs†	.17
Antisocial attitudes, beliefs		Neighborhood disorganization†	.17
Dishonesty**	.12	Antisocial parents	*.16*
Abusive parents	*.07*	Antisocial attitudes, beliefs	.16
Neglect	*.07*	Crimes against persons	*.14*
Antisocial peers	*.04*	Problem (antisocial) behavior	*.12*
		Low IQ	*.11*
		Broken home	*.10*
		Low family socioeconomic status/poverty	*.10*
		Abusive parents	*.09*
		Other family conditions	*.08*
		Family conflict**	.13
		Substance use	*.06*

Sources: Adapted from Hawkins et al. (1998c) and Lipsey and Derzon (1998). Specific risk factors are listed under general categories of risk if there is sufficient evidence to warrant it. Effect sizes in italics are from the meta-analysis by Hawkins et al. (1998c), Lipsey and Derzon (1998), or Paik and Comstock (1994). Other effect sizes are based on two or more longitudinal studies of general population samples.

* The risk factors identified by Lipsey and Derzon are predictors of involvement in felonies and could thus be predicting serious, but nonviolent offending. However, the vast majority of serious offenders are also violent offenders (see Chapter 3). The risk factors from Hawkins et al. are predictors of serious violence only.

** Males only.

† Individual risk factor. As a neighborhood-level risk factor (rate of violent offending), the effect is substantially greater ($r = .45$). See Sampson & Groves, 1989; Simcha-Fagan & Schwartz, 1986; Sampson et al., 1997; Elliott et al., 1996.

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the table shows that substance use in childhood has a greater effect on violence at age 15 to 18 than parental abuse or neglect does and that substance use in childhood has a greater effect on violence than substance use in early adolescence. (The table is discussed at greater length below, in A Note on Sources.)

The distinction between early and late risk factors is important. To be effective, prevention programs must address the risk factors that appear at a particular stage of development. The observed clustering of risk factors in childhood and in adolescence provides clear targets for intervention during these stages of the life course.

Limitations of Risk Factors

Risk factors are powerful tools for identifying and locating populations and individuals with a high potential for becoming violent, and they provide valuable targets for programs aimed at preventing or reducing violence. But there are important limitations to our knowledge about and use of risk factors.

The following cautions are worth bearing in mind:

- No single risk factor or set of risk factors is powerful enough to predict with certainty that youths will become violent. Poor performance in school is a risk factor, for example, but by no means will all young people who perform poorly in school become violent. Similarly, many youths are exposed to multiple risks yet avoid becoming involved in violence (Garmezy, 1985; Rutter, 1985; Werner & Smith, 1982, 1992).
- Because public health research is based on observations and statistical probabilities in large populations, risk factors can be used to predict violence in groups with particular characteristics or environmental conditions but not in individuals.
- Given these two limitations, assessments designed to target individual youths for intervention programs must be used with great care. Most individual youths identified by existing risk factors for violence, even youths facing accumulated risks, never become violent (Farrington, 1997; Huizinga et al., 1995; Lipsey & Derzon, 1998).
- Some risk factors are not amenable to change and therefore are not good targets for intervention (Earls, 1994; Hawkins et al., 1998a). Being born male is an example.
- Of the risk factors that are amenable to change, some are not realistic targets of preventive efforts. Eliminating poverty is not a realistic short-term goal, for example, but programs that counter some of the effects of poverty are. (Eliminating or reducing poverty should be a high-priority long-term goal, however.)
- Some situations and conditions that influence the likelihood of violence or the form it takes may not be identified by longitudinal studies as risk factors (predictors) for violence. Situational factors such as bullying, taunting, and demeaning interactions can serve as catalysts for unplanned violence. The social context can influence the seriousness or form of violence—for example, the presence of a gun or a gathering crowd of peers that makes a youth feel he (or she) needs to protect his (or her) reputation. These may not be primary causes of violence, yet they are contributing factors and are important to understanding how a violent exchange unfolds. Such influences, although important, may not be identified in this report because of the way risk factors are defined.
- Many studies of risk factors, particularly earlier ones, drew their samples from white boys and young men. The limited focus of these studies calls into question their predictive power for girls and women and for other racial or ethnic groups. Differences among cultures and their socialization and expectations of girls and boys may modify the influences of some risk factors in these groups.

Nonetheless, most of the risk factors identified in this report do apply broadly to all young people. All children go through the same basic stages of human development—and prevention of youth violence is based on understanding when and how risk factors come into play at various stages of development. Moreover, there is some evidence that most risk factors are equally valid predictors of delinquency and violence regardless of sex, race, or ethnicity (Rosay et al., 2000; Williams et al., 1999). Sophisticated studies that identify how cultural differences affect the interplay of the individual and his or her surroundings will make possible more effective prevention efforts.

Protective Factors

There is some disagreement about exactly what protective factors are. They have been viewed both as the absence of risk and as something conceptually distinct from risk (Guerra, 1998; Jessor et al., 1995; Reiss & Roth, 1993; Wasserman & Miller, 1998). The former view typically places risk and protective factors on the opposite ends of a continuum. For example, good parent-child relations might be considered a protective factor because it is the opposite of poor parent-child relations, a known risk factor. But a simple linear relationship of this sort (where the risk of violence decreases as parent-child relations improve) blurs the distinction between risk and protection, making them essentially the same thing.[1]

The view that protection is conceptually distinct from risk (the view used in this report) defines protective factors as characteristics or conditions that interact with risk factors to reduce their influence on violent behavior (Garmezy, 1985; Rutter, 1985; Stattin & Magnusson, 1996). For example, low family socioeconomic status is a risk factor for violence, and a warm, supportive relationship with a parent may be a protective factor. The warm relationship does not improve the child's economic status, but it does buffer the child from some of the adverse effects of poverty. Protective factors may or may not have a direct effect on violence (compare Jessor et al., 1995 and Stattin & Magnusson, 1996).

Interest in protective factors emerged from research in the field of developmental psychopathology. Investigators observed that children with exposure to multiple risk factors often escaped their impact. This led to a search for the characteristics or conditions that might confer resilience—that is, factors that moderate or buffer the effects of risk (Davis, 1999; Garmezy, 1985; Rutter, 1987; Werner, 1989). Protective factors offer an explanation for why children and adolescents who face the same degree of risk may be affected differently.

The concept of protective factors is familiar in public health. Wearing seat belts, for example, reduces the risk of serious injury or death in a car crash. Identifying and measuring the effects of protective factors is a new area of violence research, and information about these factors is limited. Because they buffer the effect of risk factors, protective factors are an important tool in violence prevention.

Like risk factors, proposed protective factors are grouped into individual, family, school, peer group, and community categories. They may differ at various stages of development, they may interact, and they may exert cumulative effects (Catalano et al., 1998; Furstenberg et al., 1999; Garmezy, 1985; Jessor et al., 1995; Rutter, 1979; Sameroff et al., 1993; Thornberry et al., 1995). Just as risk factors do not necessarily cause an individual child or young person to become violent, protective factors do not guarantee that an individual child or young person will not become violent. They reduce the probability that groups of young people facing a risk factor or factors will become involved in violence.

A Note on Sources

This chapter draws heavily on four important studies: Lipsey & Derzon's meta-analysis of 34 longitudinal studies on risk factors for violence (1998); Hawkins et al.'s study of malleable risk and protective factors drawn from 30 longitudinal studies, including some not included in the Lipsey & Derzon meta-analysis (Hawkins et al., 1998c); Paik and Comstock's meta-analysis of 217 studies of exposure to media violence and its effects on aggression and violence (1994); and the National Institute of Mental Health's *Taking Stock* report (Hann & Borek, in press), an extensive review of research on risk factors for aggression and other behavior problems.

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[1] If the relationship to violence is nonlinear, risk and protection may take on a different meaning. However, the conditions and characteristics identified as protective factors by those using the absence-of-risk conceptualization rarely, if ever, involve a nonlinear relationship to violence.

Table 4–1 is adapted from the tables presented in the Lipsey and Derzon and Hawkins et al. meta-analyses. The risk factors in Table 4–1 predict felonies—that is, violent and property crimes—at ages 15 to 18, the peak years of involvement.[2] Entries in bold are effect sizes from the meta-analyses by Lipsey and Derzon, Hawkins et al., and Paik and Comstock for various classes of risk factors; other entries are effect sizes reported in two or more longitudinal studies. (Risk classes are described in Appendix 4–A and later sections of this chapter.) Some of the risk classes in Table 4–1 include several separate risk factors. For example, psychological condition includes hyperactivity, daring, and attention problems.

Additional risk factors and classes of risk factors have been added from other sources. For example, there is adequate evidence to establish harsh, lax, or inconsistent discipline as a separate risk factor, although Lipsey and Derzon include it in the poor parent-child relations class. Academic failure, family conflict, and belonging to a gang are additional examples of risk factors not included in any of the meta-analyses.

The measure of effect size used in these tables is a bivariate correlation *(r)*, or simple correlation between two variables. All estimates of effect size are statistically significant and are based on multiple studies, with those for risk classes typically involving more studies than those for separate risk factors. The studies reviewed in Lipsey and Derzon, Paik and Comstock, and Hawkins et al. are not cited here; however, other studies that were used to establish a risk factor or that are included in estimates of effect size are cited.[3]

There is a rich and extensive body of research on risks for antisocial behavior, externalizing behavior, conduct disorder, and aggression (Hann & Borek, in press). Each of these terms defines a pattern or set of behaviors that includes aggressive or violent behavior, but most of the behaviors included are either nonphysical, nonviolent acts or relatively minor forms of physical aggression. Risk factors for antisocial behavior may be quite different from those that predict violent behavior (robbery, aggravated assault, rape, and homicide). Since antisocial behavior does not present the potential for serious injury or death that violence does, this report relies on studies that identify risk factors for serious offenses generally and violent behavior specifically, bearing in mind that the vast majority of serious offenders report having been involved in violent offenses.

Summary

Risk and protective factors can be found in every area of a child or adolescent's life, they exert different effects at different stages of development, and they gain strength in numbers. The public health approach to the problem of youth violence seeks to identify risk and protective factors, determine when in the life course they typically occur and how they operate, and enable researchers to design preventive programs to be put in place at just the right time to be most effective.

This chapter describes what is known about individual, family, school, peer group, and community risk and protective factors that exert their effects in childhood and adolescence. It describes the power of early risk factors, which come into play before puberty, and late risk factors, which exert their influence after puberty, to predict the likelihood of youth violence.

RISK FACTORS IN CHILDHOOD

The first decade of life encompasses a vast period of human development. Infants form attachments to parents or other loving adults and begin to become aware of themselves as separate beings. As toddlers, they begin to talk, to assert themselves, to explore the world around them, and to extend their emotional and social bonds to people other than their parents.

The start of school is a milestone in children's continuing social and intellectual development. Other children become more important in their lives, though still not as important as family members. They begin to empathize with others and hone their sense of right and wrong. As they progress through elementary school, children gain valuable reasoning and problem-solving skills as well as social skills.

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[2] As noted in Chapter 3, most violent offenders commit many serious property offenses (such as burglary, auto theft, and larceny), and most youths involved in serious property offenses (FBI index offenses) are also involved in violent offenses. The risk factors described here are based on longitudinal studies that use self-reports to predict violent offenses. Several of the studies also include official arrest data and thus predict self-reported offenses, arrests for serious or violent offenses, or both.

[3] Effect sizes for risk factors not included in the meta-analyses reported by Lipsey and Derzon (1998), Hawkins et al. (1998c), and Paik and Comstock (1994) are weighted (by sample size) mean correlations. The effect sizes in Paik and Comstock are unweighted mean correlations.

Exposure to or involvement in violence can disrupt normal development of both children and adolescents, with profound effects on their mental, physical, and emotional health.[4] In addition, exposure to violence affects children and adolescents differently at different stages of development (Marans & Adelman, 1997).

Young children exposed to violence may have nightmares or be afraid to go to sleep, fear being left alone, or regress to earlier behavior, such as baby talk or bed-wetting. They may exhibit excessive irritability or excitability. Violence in the family, especially, may inhibit young children's ability to form trusting relationships and develop independence.

Elementary school children who live in violent neighborhoods may also experience sleep disturbances and be less likely to explore their environment. In addition, they can become frightened, anxious, depressed, and aggressive. They may have trouble concentrating in school. Because they understand that violence is intentional, they may worry about what they could have done to prevent or stop it (Osofsky, 1999).

Violence also affects parents. Adults living in violent households or neighborhoods may not be able to keep their children safe or to protect them from harmful influences. Some parents living in unsafe neighborhoods do not let their children play outside. While this solution may safeguard children temporarily, it can also impede healthy development. Parents in these situations understandably feel helpless and hopeless. Those who have been traumatized by violence themselves may, like their children, become anxious, withdrawn, or depressed. Under such circumstances, parents cannot respond spontaneously and joyously to their children, making it difficult for children to develop strong, secure attachments to their parents. Forming a bond with a loving, responsive parent or other adult caregiver is an essential factor in healthy development (Furstenberg et al., 1999; Osofsky, 1999; Patterson & Yoerger, 1997). Children and families exposed to or involved in violence may want to seek professional advice in addressing their mental, physical, and emotional health concerns.

Risk Factors by Domain

A few risk factors for youth violence occur before birth. Others come into play as the child develops in response to his or her family and surroundings. Thus, most of the risk factors that exert an effect before puberty are found in the individual and family domains rather than in the larger world, a situation that changes dramatically in adolescence. Childhood risk factors are listed by domain in Box 4–1; effect sizes are listed in Table 4–1.

Individual

The most powerful early risk factors for violence at age 15 to 18 are involvement in general offenses and substance use before age 12. General offenses include serious, but not necessarily violent acts, such as burglary, grand theft, extortion, and conviction for a felony. Children engaging in such crimes often come to the attention of the police and juvenile justice system. Numerous studies have documented the overlap between serious nonviolent and violent offenses in adolescence, so early involvement in serious offenses carries a substantial risk for violence later.

Experimentation with drugs, alcohol, tobacco, or some combination of these substances is not particularly unusual by age 18, but use of these substances by children under the age of 12 is. Not only are these substances harmful to health, they are illegal. Thus, use of these substances signals antisocial attitudes and early involvement in a delinquent lifestyle that often comes to include violent behavior in adolescence (Fagan, 1993).

Two moderate risk factors emerge in childhood, being male and aggression. Boys (and young men) are far more likely than girls to be violent (see Chapter 2), yet some researchers have suggested that sex is a risk marker rather than a risk factor (Earls, 1994; Hawkins et al., 1998a; Kraemer et al., 1997). A risk marker is a characteristic or condition that is associated with known risk factors but exerts no causal influence of its own (Earls, 1994; Patterson & Yoerger, 1997).[5] For example, many more boys than girls are hyperactive, a risk factor with a small effect size, so some of the predictive power of being male may actually be the influence of hyperactivity. Moreover, boys have traditionally been exposed to more violence than girls, and socially approved male role models are more aggressive, suggesting that social learning plays a role in this risk factor. However, research indicates that being male confers risk even after accounting for other known risk factors. This suggests that being male is a risk factor rather than a risk marker, perhaps with some biological or biological-environmental interaction as the causal mechanism.

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[4] Numerous studies of these effects have been done, notably those of Robert Pynoos and colleagues. See, for example, Pynoos, R. & Nader, K. (1988). Psychological first aid for children who witness community violence. *Journal of Traumatic Stress*, 1, 445–473.

Many studies have found aggression—characterized as aggressive and disruptive behavior, verbal aggression, and aggression toward objects—to be a moderate risk factor among boys, although there is some evidence that physical aggressiveness is actually responsible for most of the observed effect (Nagin & Tremblay, 1999). Additional research is needed to sort out the unique influence of each of these types of aggression.

The remaining individual risk factors have relatively small effect sizes. Various psychological conditions, such as hyperactivity, impulsiveness, daring, and short attention span, pose a small risk for violence. A consistent individual predictor is hyperactivity/low attention, the central components of attention-deficit/hyperactivity disorder (ADHD), a cognitive disorder that may be genetically influenced in some way (Hawkins et al., 1998a). ADHD is characterized by restlessness, excessive activity, and difficulty paying attention, traits that may also contribute to low academic performance, a risk factor in school. Hyperactivity is often found in combination with physical aggression, another risk factor. Some researchers question the independent effect of hyperactivity on later violence, suggesting that the effect is actually physical aggression (and perhaps low academic performance) that was not controlled for in earlier studies of hyperactivity (Nagin & Tremblay, 1999). There is little agreement about the mechanism linking hyperactivity to violence.

The effects of children's exposure to television and film violence have been studied extensively in regard to aggression, but there is relatively little research regarding the effects on more serious forms of violent behavior (for an extended discussion, see Appendix 4–B). Experimental studies have found that exposure to media violence has a small average effect size (.13) on serious forms of violence (Paik & Comstock, 1994); the average effect size in cross-sectional survey studies was very small (.06). Two frequently cited longitudinal studies have examined the effects that exposure to television violence in childhood produces on violent behavior during adolescence or early adulthood. One, in which participants reported having punched, beaten, or choked someone as young adults, found a significant predictive effect for women (.22) but no significant effect for men (Huesmann et al., submitted). The other study, in which teenage males reported being involved in a knife fight, car theft, mugging, gang fight, or similar delinquent behavior, found a statistically significant predictive effect in only one of nine tests (Milavsky et al., 1982). Exposure to violence appears to have a weak predictive effect on relatively immediate violence in experimental studies, but there is little consistent evidence to date for a long-term predictive effect.

Little research has been done on violence in other media—video games, music videos, and the Internet. A recent meta-analysis by Anderson and Bushman (in press) reports that video game violence has a small average effect size (.19) on physical aggression in experimental and cross-sectional studies. Theoretically, the influence of these interactive media might well be greater than that of television and films, which present a passive form of exposure, but there are no studies to date of the effects of exposure to these types of media violence and violent behavior.

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[5] This is a different use of the term "risk marker" than that proposed by Kraemer et al. (1997). They use risk marker to refer to a risk factor or cause (such as sex or race) that cannot, in practical terms, be changed by an intervention. This report focuses on its causal role rather than its amenability to change.

Problem behavior, another risk factor with a small effect size, refers to relatively minor problem behaviors such as stealing, truancy, disobedience, and temper tantrums. While not serious in themselves, antisocial behaviors may set the stage for more serious nonviolent or violent behavior later.

The medical or physical risk factor includes a number of conditions that as a group are somewhat predictive of violence. Prenatal and early postnatal complications, a more specific set of medical conditions, have been found to have inconsistent effects across a number of studies (Hawkins et al., 1998c). These complications encompass a broad group of genetic conditions or physical injuries to the brain and nervous system that interfere with normal development, including low birth weight, oxygen deprivation, and exposure to toxins such as lead, alcohol, or drugs (Hawkins et al., 1998b). Low resting heart rate, a condition that has been studied primarily in boys, is associated with fearlessness or stimulation seeking, both characteristics that may predispose them to aggression and violence (Raine et al., 1997; Hawkins et al., 1998c), but there is not enough evidence to establish this condition as a risk factor for violence. Some studies have even questioned its effects on aggression (Van Hulle et al., 2000; Wadsworth, 1976; Kindlon et al., 1995). There is also no evidence that internalizing disorders—nervousness and withdrawal, anxiety, and worrying—are related to later violence (Hawkins et al., 1998c).

Low IQ, or low intelligence, includes learning problems and poor language ability. This risk factor has a small effect size and is often accompanied by other risk factors with small effect sizes, such as hyperactivity/low attention and poor performance in school.

Antisocial beliefs and attitudes, including dishonesty, rule-breaking, hostility to police, and a generally favorable attitude toward violence, usually constitute a risk factor in adolescence, not childhood (Hawkins et al., 1998c). Only dishonesty in childhood is predictive of later violence or delinquency, and its effect is small.

Family

There are no known strong risk factors for youth violence in the family domain, but low socioeconomic status/poverty and having antisocial parents are moderate factors. Socioeconomic status generally refers to parents' education and occupation as well as their income. Poorly educated parents may be unable to help their children with schoolwork, for example, and children living in poor neighborhoods generally have less access to recreational and cultural opportunities. In addition, many poor families live in violent neighborhoods, and exposure to violence can adversely affect both parents and children, as described above. Limited social and economic resources contribute to parental stress, child abuse and neglect, damaged parent-child relations, and family breakup—all risk factors with small effects in childhood.

Studies suggest that antisocial parents—that is, violent, criminal parents—represent an environmental rather than a genetic risk factor (Moffitt, 1987). In other words, children learn violent behavior by observing their parents rather than by inheriting a propensity for violence. In fact, attachment to parents, a possible protective factor, can have the opposite effect if the parents are violent (Hawkins et al., 1998c).

Among the early risk factors with small effect sizes on youth violence is poor parent-child relations. One specific risk factor in this class—harsh, lax, or inconsistent discipline—is also somewhat predictive of later violence (Hawkins et al., 1998c). Children need reasonable, consistent discipline to establish the boundaries of acceptable and unacceptable behavior. Children who are treated harshly may view rough treatment as acceptable, those who are given no guidance may engage in whatever behavior gets them what they want, and children who receive mixed signals are completely at sea regarding appropriate behavior. Other family conditions, such as high stress, large size, and marital discord, also exert a small effect on later violence.

Another childhood predictor with a small effect size is broken homes, a category that includes divorced, separated, or never-married parents and a child's separation from parents before age 16. Separation from parents also operates as a distinct risk factor, again with a small effect size.

Abusive parenting in general and neglect in particular are predictors of later violence, but they have very small effect sizes. Neglect operates as a distinct risk factor, possibly because neglected children are less likely to be supervised or taught appropriate behavior. This is not to imply that child abuse and neglect do not cause serious problems in adolescence: Indeed, they have large effects on mental health problems, substance abuse, and poor school performance (Belsky & Vondra, 1987; Cicchetti & Toth, 1995; Dembo et al., 1992; Esbensen & Huizinga, 1991; Silverman et al., 1996; Smith & Thornberry, 1995). This finding is discussed in more detail below, in the section on unexpected findings and effects.

School

The only early risk factor in the school domain is poor attitude toward and performance in school, and its effects are small. Numerous individual and family factors may contribute to poor performance, making it a fairly broad measure. For example, a child who is physically aggressive and is rejected by peers or who has difficulty concentrating or sitting still in class may understandably have difficulty performing academic tasks. Children who have been exposed to violence, as noted earlier, may also have trouble concentrating in school.

Peer Group

Young children do not socialize extensively with other children and are not strongly influenced by peers. Peers become more important as children progress through elementary school, although school-age children still look primarily to parents for cues on how to behave. Nonetheless, weak social ties to conventional peers and associating with antisocial peers both exert small effects in childhood.

Children with weak social ties are those who attend few social activities and have low popularity with conventional peers. School-age children often reject physically aggressive children because of their inappropriate behavior (Hann & Borek, in press; Reiss & Roth, 1993). The combination of rejection and aggressiveness exacerbates behavior problems, making it more difficult for aggressive children to form positive relationships with other children. Indeed, recent research indicates that children who are both aggressive and rejected show poorer adjustment in elementary school than children who are aggressive, rejected, or neither (Hann & Borek, in press).

Being drawn to antisocial peers may introduce or reinforce antisocial attitudes and behavior in children. Indeed, aggressive children tend to seek each other out (Hann & Borek, in press).

Community

Community risk factors, such as living in socially disorganized neighborhoods or neighborhoods with high rates of crime, violence, and drugs, are not powerful individual-level predictors in childhood because these external influences have less direct impact on children than on adolescents. They may well exert indirect influences through poor parenting practices, lack of family resources, and parent criminality or antisocial behavior.

Summary

The most powerful early predictors of violence at age 15 to 18 are involvement in general offenses (serious, but not necessarily violent, criminal acts) and substance use. Moderate factors are being male, aggressiveness, low family socioeconomic status/poverty, and antisocial parents.

RISK FACTORS IN ADOLESCENCE

Violence increases dramatically in the second decade of life, peaking during late adolescence at 12 to 20 percent of all young people and dropping off again sharply by the early twenties. Some of these youths followed the childhood-onset trajectory, becoming violent before puberty and escalating their rate of offending during adolescence. But over half of all violent youths begin their violent behavior in mid- to late adolescence. These youths gave little indication of problem behavior in childhood and did not have poor relations with their parents.

There are numerous theories about why violence begins in adolescence, but a few themes run through most of them (Elliott & Tolan, 1999; Pepler & Slaby, 1994). Developmentally, puberty is accompanied by major physical and emotional changes that alter a young person's relationships and patterns of interaction with others. The transition into adolescence begins the move toward independence from parents and the need to establish one's own values, personal and sexual identity, and the skills and competencies needed to compete in adult society. Independence requires young people to renegotiate family rules and degree of supervision by parents, a process that can generate conflict and withdrawal from parents. At the same time, social networks expand, and relationships with peers and adults in new social contexts equal or exceed in importance the relationships with parents. The criteria for success and acceptance among peers and adults change.

Adapting to all of these changes in relationships, social contexts, status, and performance criteria can generate great stress, feelings of rejection, and anger at perceived or real failure. Young people may be attracted to violent behavior as a way of asserting their independence of the adult world and its rules, as a way of gaining the attention and respect of peers, as a way of compensating for limited personal competencies, or as a response to restricted opportunities for success at school or in the community. Good relationships with parents during childhood will help in a successful transition to adolescence, but they do not guarantee it.

Adolescents exposed to violence at home may experience some of the same emotions and difficulties as younger school-age children—for example, fear, guilt, anxiety, depression, and trouble concentrating in school. In addition, adolescents may feel more vulnerable to violence from peers at school or gangs in their neighborhood and hopeless about their lives and their odds of surviving to adulthood. These young people may not experience the growing feelings of competence that are important at their stage of development. Ultimately, their exposure to violence may lead them to become violent themselves. Studies have shown that adolescents exposed to violence are more likely to engage in violent acts, often as preemptive strikes in the face of a perceived threat (Fagan & Wilkinson, 1998; Loeber et al., 1998; Singer et al., 1994, 1995).

Risk Factors by Domain

Not surprisingly, different risk factors for violence assume importance in adolescence. Family factors lose predictive value relative to peer-oriented risk factors such as weak social ties to conventional peers, antisocial or delinquent friends, and membership in a gang (Table 4–1). Even involvement in general offenses, which had the largest effect size in childhood, has only a moderate effect size in adolescence.

Individual

In early adolescence, involvement in general offenses—that is, illegal but not necessarily violent acts, including felonies—becomes a moderate risk factor for violence between the ages of 15 and 18. Its predictive power lessens from childhood, largely because teenagers are somewhat more likely than children to engage in illegal behavior.

Psychological conditions, notably restlessness, difficulty concentrating, and risk taking, have small effect sizes in adolescence. Restlessness and difficulty concentrating can affect performance in school, a risk factor whose importance increases slightly in adolescence. Risk taking gains predictive power in early adolescence, particularly in combination with other factors. A reckless youth who sees violence as an acceptable means of expression, for example, is more likely to engage in violent behavior.

Aggressiveness exerts a small effect on later violence among adolescent males, as does simply being male. While aggressiveness is unusual in children between the ages of about 6 and 10, it is not terribly unusual in adolescence. Similarly, physical violence and crimes against persons in early adolescence have a small effect on the likelihood of violence at ages 15 to 18.

Antisocial attitudes and beliefs, including hostility toward police and a positive attitude toward violence, are more important predictors among adolescent boys than they are among children, but their effect sizes remain small. Antisocial behavior and low IQ continue to have small effect sizes in adolescence.

Substance use, which was a strong predictor of later violence for children, poses a small risk of later violence for adolescents. The question as to whether drug use causes young people to become violent is complex and has been widely studied (see Miczek et al., 1994 for a review), but there is little compelling pharmacological evidence linking illicit drug use and violence. In one large study, youths reported that over 80 percent of the violent incidents they initiated had not been preceded by drug use, including alcohol use (Huizinga et al., 1995). Thus, the risk may lie more in the characteristics of the social settings in which drug use and violence are likely to occur than in any effect of drugs on behavior (Parker & Auerhahn, 1998; Reiss & Roth, 1993).

The majority of violent adolescent offenders use alcohol and illicit drugs (see Chapter 3). Illicit drug use tends to begin after the onset of violence and to be associated with more frequent violent behavior and a longer criminal career (Elliott et al., 1989). This finding suggests that drug use may contribute to continued violence rather than to the onset of violence, but it is far from conclusive. Evidence shows that some violent behavior stems from robberies or other attempts to get money to support a drug habit but also that this link is relatively rare. If any substance can be said to cause youth violence, that substance is alcohol (APA, 1993; Parker & Auerhahn, 1998); however, this causal link is inconclusive because adolescent drinking is dependent to a large degree on the situation and social context in which it takes place (for reviews, see Parker & Auerhahn, 1998; Pernanen, 1991; Reiss & Roth, 1993; Roizen, 1993).

Family

Parents' direct influence on behavior is largely eclipsed by peer influence during adolescence. Not surprisingly, therefore, most family risk factors diminish in importance, including the influence of antisocial parents and low socioeconomic status, the most powerful early risk factors. There are no large or even moderate risk factors in the family domain in adolescence.

Poor parent-child relations continue to have a small effect size, but for adolescents this category includes inadequate supervision and monitoring of young people's activities and low parental involvement, in addition to inappropriate discipline (Elliott et al., 1985; Hawkins et al., 1998a; Patterson & Yoerger, 1997; Roitberg & Menard, 1995). Broken homes and parental abuse also exert small effects. Other adverse family conditions present a risk factor; for example, some studies have found that family conflict is a risk factor for violence among adolescent males.

Although parents can and do influence their adolescents' behavior, they do so largely indirectly. The kind of peers chosen by young people, for example, is related to the relationship they have with their parents (Elliott et al., 1989; Hill et al., 1999; Patterson & Yoerger, 1997; Simons et al., 1994).

School

There are no large or moderate risk factors for violence in the school domain, but poor attitude toward or performance in school—particularly if it leads to academic failure—is a slightly larger risk factor in early adolescence than in childhood.

Research on school violence indicates that a culture of violence has arisen in some schools, adversely affecting not just students but teachers and administrators as well (Gottfredson et al., in press; Lorion, 1998). Students exposed to violence at school may react by staying home to avoid the threat or by taking weapons to school in order to defend themselves (Brener et al., 1999). For their part, teachers may burn out after years of dealing with discipline problems and threats of violence.

Schools located in socially disorganized neighborhoods are more likely to have a high rate of violence than schools in other neighborhoods (Laub & Lauritsen, 1998). At the same time, however, researchers emphasize that most of the violence to which young people are exposed takes place in their home neighborhood or the neighborhood surrounding the school, not in the school itself (Laub & Lauritsen, 1998). Individual schools, like individual students, do not necessarily reflect the characteristics of the surrounding neighborhood. A stable, well-administered school in a violent neighborhood may function as a safe haven for students.

Some gang activity takes place in schools, but school gangs are generally younger and less violent than street gangs, which form in neighborhoods (Laub & Lauritsen, 1998). Gangs in schools increased dramatically (by 87 percent) between 1989 and 1995 but have recently declined (see Chapter 3). The chances of becoming a victim of violence are more than two and one-half times as great in schools where gangs are reported, and these schools are disproportionately located in disadvantaged, disorganized neighborhoods (Met Life, 1993; Snyder & Sickmund, 1999).

Peer groups complicate the picture further. They operate both in neighborhoods and in schools, but the concentration of young people in schools may intensify the influence of these groups. One large study of adolescent males found that some schools have dominant peer groups that value academic achievement and disapprove of violence, while others have groups that approve of the use of violence (Felson et al., 1994). This study found that the risk of becoming involved in violence varied depending on the dominant peer culture in their school, regardless of their own views about the use of violence.

Peer Group

Peer groups are all-important in adolescence. Adolescents who have weak social ties—that is, who are not involved in conventional social activities and are unpopular at school—are at high risk of becoming violent, as are adolescents with antisocial, delinquent peers. These two types of peer relationships often go together, since adolescents who are rejected by or unpopular with conventional peers may find acceptance only in antisocial or delinquent peer groups. Social isolation—having neither conventional nor antisocial friends—is not a risk factor for violence, however (Cairns & Cairns, 1991; Elliott & Menard, 1996; Fergusson & Lynskey, 1996; Patterson & Yoerger, 1997). A third risk factor with a large effect size on violence is belonging to a gang. Gang membership increases the risk of violence above and beyond the risk posed by having delinquent peers (Thornberry, 1998). These three peer group factors appear to have independent effects, they sometimes cluster together, and they are all powerful late predictors of violence in adolescence.

Researchers who have studied what causes young people to join gangs have found that the risk factors for gang membership are virtually the same as those for violence generally (Hill et al., 1999). The notion that gangs act as surrogate families for children who do not have close ties to their own families is not borne out by recent data (Hill et al., 1999), but gangs do strengthen young people's sense of belonging, their independence from parents, and their self-esteem. Estimates from law enforcement agencies indicate that gang members are overwhelmingly male and the great majority (almost 80 percent) are African American or Hispanic (Snyder & Sickmund, 1999). But surveys in which young people identify themselves as gang members suggest that there are substantially larger proportions of white and female gang members. In a survey of nearly 6,000 8th graders in 1995, 25 percent of white students and 38 percent of female students reported they were gang members (Esbensen & Osgood, 1997). Lacking comparisons within ethnic groups, it is difficult to tell whether ethnicity per se is a risk factor in gang membership.

Community

Increasing involvement in the community is a healthy part of adolescent development, unless the community itself poses a threat to health and safety. Social disorganization and the presence of crime and drugs in the neighborhood pose a small risk of violence when measured on an individual level, as they are in Table 4–1. As noted in the table, however, both of these risk factors have a substantially greater effect on the neighborhood level, where they measure the average rate of violent offending by youths living in the neighborhood or community.

Socially disorganized communities are characterized in part by economic and social flux, high turnover of residents, and a large proportion of disrupted or single-parent families, all of which lessen the likelihood that adults will be involved in informal networks of social control. As a result, there is generally little adult knowledge or supervision of the activities of teenagers and a high rate of crime. Moreover, in areas experiencing economic decline, there are likely to be few neighborhood businesses. In such an environment, it is hard for young people to avoid being drawn into violence. Not only are they on their own after school, they are exposed to violent adults and youth gangs, they have few part-time job opportunities, and their neighborhood is not likely to offer many after-school activities such as sports or youth groups (Bursik & Grasmick, 1993; Sampson et al., 1987).

Social disorganization is also a risk factor for violence in rural areas. One study of rural communities found that poverty plays a less important role in predicting violence than residential instability, broken homes, and other indicators of social disorganization (Osgood & Chambers, 2000). In fact, very poor areas were not characterized by high residential instability or a large proportion of broken homes. In cities, however, the combination of poverty with instability and family disruption is predictive of violence (Bursik & Grasmick, 1993; Elliott et al., 1996).

Adolescents who are exposed to violence in their neighborhood feel vulnerable and unable to control their lives. These feelings can lead to helplessness and hopelessness. Such young people may turn to violence as a way of asserting control over their surroundings. They may arm themselves or even join a gang for protection. Studies have shown that adolescents exposed to violence are more likely to engage in violent acts, often as preemptive strikes in the face of a perceived threat (Singer et al., 1994, 1995).

Neighborhood adults who are involved in crime pose a risk because young people may emulate them. Easily available drugs add to the risk of violence. As noted earlier, drug use is associated with both a higher rate of offending and a longer criminal career (Elliott et al., 1989). More important, ready availability of drugs indicates that considerable drug trafficking is taking place in the neighborhood—and drug trafficking is dangerous for buyer and seller alike.

Summary

Violence peaks during the second decade of life. The youths who first became violent in childhood escalate their violence in adolescence, and a larger group of young people embarks on violence in adolescence. For some young people, violence represents a way of gaining the respect of peers, enhancing their sense of self-worth, or declaring their independence from adults. Violence drops off as adolescents enter adulthood and assume adult roles.

Parents' direct influence on behavior is largely supplanted in adolescence by peer influences. Thus the most powerful peer predictors of violence in adolescence are weak social ties to conventional peers, ties to antisocial, delinquent peers, and belonging to a gang.

Unexpected Findings and Effects

This chapter does not identify a number of characteristics and conditions frequently thought of as risk factors. Furthermore, some of the risk factors that have been identified may exhibit smaller effect sizes than expected. There are two reasons for this. First, this report relies on longitudinal studies, which identify risk factors and their effect sizes on the basis of their ability to predict future behavior. Much of this research involves identifying risks for aggression, externalizing behavior, or antisocial behavior—not risks for violence. While there is considerable overlap between the risk factors for aggression and those for violence, there are some important differences, particularly with respect to effect sizes (Hann & Borek, in press). Television violence, for example, has a very large effect on aggressive behavior but only a small effect on violence. Second, some studies that have been widely cited in the media involve cross-sectional and retrospective research designs, which are inappropriate for identifying factors that predict future violence.

Conduct disorder has been linked to youth violence in numerous studies, but the cluster of symptoms used to determine this disorder includes physical aggressiveness, nonphysical aggressiveness, and antisocial attitudes and beliefs. For purposes of predicting violence, the critical question is: What components of this disorder actually confer risk? There is some evidence that physical aggression accounts for most of the predictive power of conduct disorder (Nagin & Tremblay, 1999) and has a moderate to small effect size as a predictor of violence. Antisocial attitudes and beliefs also predict violence, but with an even smaller effect size. The three components of conduct disorder generally cluster together, which accounts for their having been combined into a single risk factor in earlier studies. Other childhood disorders such as attention-deficit/hyperactivity disorder, depressive and anxiety disorders, and their symptoms do not cause violent behavior, but their presence often signals serious behavioral and emotional problems that negatively affect family, social, and academic functioning, domains of risk for violent behavior.

Race has long been considered a risk factor for the onset of violence, and it is included as a risk factor in most studies using simple bivariate predictors of violence. The question is whether race predicts violence once other known risk factors are taken into account. Studies that have accounted for the effects of other known risk factors have typically found no significant effect of race on youth violence (Elliott et al., 1989; Reiss & Roth, 1993; Roitberg & Menard, 1995). Thus, race appears to be a risk marker rather than a risk factor. Race is a proxy for other known risk factors—living in poor, single-parent families, doing poorly at school, and being exposed to neighborhood disadvantage, gangs, violence, and crime. The evidence suggests that the link between race and violence is based largely on social and political distinctions rather than biological differences.

Ethnicity has also been proposed as a risk factor, but it has not been studied extensively enough to include here. Young people from ethnic minorities may be subject to prejudice and thus to limited opportunity, and they may face unique stresses when their family culture conflicts with the dominant U.S. culture. At the same time, their ethnic culture may offer them strong support and guidance and thus function as a protective factor (APA, 1993).

Child abuse is widely considered to be a powerful risk factor for youth violence. This belief is based on a number of early studies that suffered from serious methodological problems (see Dodge et al., 1990; Garbarino & Plantz, 1986; Howing et al., 1990; and Widom, 1989 for reviews). In more sophisticated, controlled longitudinal studies, the effects are much smaller (see Table 4–1), a finding that holds for both self-report and official record studies. In addition, studies reporting on child abuse as a predictor of nonviolent delinquent behavior or less serious offenses find larger effect sizes than those cited here for violence or serious delinquency (Bolton et al., 1977; Smith & Thornberry, 1995; Widom, 1989, 1991; Zingraff et al., 1993, 1994). Neither sexual abuse nor physical abuse is a significant predictor of youth violence when considered alone (Hawkins et al., 1998c). Sexual abuse has been linked to criminal behavior in adulthood (Widom & Ames, 1994), but not to violence in adolescence.

Although the effect size of child abuse or neglect is small when a correlation measure is used (as in Table 4–1), the relative risk of violence among abused or neglected children can be substantial. Knowing that a child was abused does not help much in predicting future violence, however, since the vast majority of abused children do not become violent. For example, one longitudinal study showed that 5 percent of abused children were arrested for a violent crime by age 18, compared to 3 percent of nonabused children (Widom, 1991). The relative risk of arrest for violence is nearly twice as great in the abused group as in the nonabused group, yet the correlation for this relationship is .07, a small effect size.[6] In other words, even though the probability of later violence is substantially higher among abused than nonabused youths in this study, the correlation is small because the majority of all youths (95 percent of abused and 97 percent of nonabused youths) did not become violent.

When the proportion of youths who become violent is greater, the relative risks appear to be lower. Thus, when subjects in the 1991 Widom study were tracked to age 30, the relative risk of violence dropped to 1.3 (Widom, 2000). In the one longitudinal self-report study to date, which had relatively high proportions of abused children reporting violence, the relative risk of violence was 1.2 (Smith & Thornberry, 1995). In both of these cases, the correlation was less than .10.

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[6] In another study, the relative risk of later violence was two to three times as great among abused children as nonabused children (Zingraff et al., 1993).

Heredity does not seem to play a strong role in violence (see Cary, 1994 for a review). While there is some evidence supporting a genetic effect, the proposed mechanisms are very complex and nonspecific (Turbin, 2000). Neurotransmitters such as dopamine, serotonin, and GABA may play a role in aggression, but so far their mechanisms of action are unclear and there is insufficient evidence to consider them predictors of violence. In general, there are no known neurobiological patterns that are precise and specific enough to be considered reliable risk factors for violent behavior (Reiss & Roth, 1993).

Drug trafficking in early adolescence predicts later violence (Hawkins et al., 1998c; Herrenkohl et al., 2000; Huizinga et al., 1995; Menard et al., in press; Reiss & Roth, 1993). This risk factor is not included here because only one study presents correlations (or the data necessary to calculate them); therefore, average effect size could not be estimated. In the Menard et al. study, the correlation between selling marijuana and violence in adolescence was .33; for selling hard drugs, it was .27. In the Hawkins et al. study, the odds ratio for selling drugs at age 14 and violence at age 18 was 3.34; it was 4.55 for selling at age 16 and violence at age 18. Drug selling thus appears to have at least a moderate effect size.

PROPOSED PROTECTIVE FACTORS IN CHILDHOOD AND ADOLESCENCE

Research on resilience and the public health approach to the problem of youth violence have brought a new awareness of, and research on, protective factors—those aspects of the individual and his or her environment that buffer or moderate the effect of risk. Identifying and understanding how protective factors operate is potentially as important to violence prevention and intervention efforts as research on risk factors.

To date, the evidence regarding protective factors against violence has not met the standards established for risk factors. Therefore, this report does not refer to protective factors, only to proposed protective factors (Table 4–2). There are several reasons for this: Not all studies define protective factors as buffering the effects of risk; most studies have looked for an effect on antisocial behavior in general, not on violence specifically; and those that have found buffering effects on violence have not been adequately replicated. This does not mean that protective factors do not exist, just that more research is needed to identify them.[7]

Most studies of protective factors do not specify when in the course of development these factors exert their buffering effects or how they change over the life course. Further study is needed to clarify these points; therefore, Table 4–2 does not show age of onset for the proposed protective factors listed.

A Note on Sources

The authors of a 1995 longitudinal study on protective factors and their buffering effects on the risk of problem behavior in adolescence (Jessor et al., 1995) recently reexamined their data to see whether they could find any buffering effect specifically on violence. They did find a buffering effect, but their results must be considered preliminary until they are replicated by others. Nonetheless, these findings are encouraging, since they indicate that several of the factors identified as protective against problem behavior also provided a buffering effect against violence. By implication, other studies that have demonstrated buffering effects on the risk of antisocial behavior or general delinquency (for example, Fergusson & Lynskey, 1996) may also contain evidence of potential protective factors against violence. The discussion of proposed protective factors in this report rests on the

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[7] There is a fairly extensive body of research on protective factors in the field of psychopathology (Garmezy, 1985; Rae-Grant et al., 1989; Rolf et al., 1993; Rutter, 1979, 1985; Rutter et al., 1979; Stattin et al., 1997; Werner and Smith, 1982, 1992). There are also a number of studies focusing on delinquency that purport to identify protective factors (Brewer et al., 1995; Farrington and West, 1993; Hawkins et al., 1992; Resnick et al., 1997; Smith et al., 1995).

Table 4–2. Proposed protective factors, evidence of buffering risk, and outcome affected, by domain

Domain	Proposed Protective Factor	Buffers Risk	Outcome
Individual	Intolerant attitude toward deviance	Yes	Violence, problem behavior
	High IQ	Yes	Antisocial behavior
	Being female	No	Antisocial behavior
	Positive social orientation	Yes	Antisocial behavior
	Perceived sanctions for transgressions	Not significant	Violence, antisocial behavior
Family	Warm, supportive relationships with parents or other adults	No	Violence, antisocial behavior
	Parents' positive evaluation of peers	No	Serious delinquent behavior
	Parental monitoring	No	Serious delinquent behavior, antisocial behavior
School	Commitment to school	Yes	Violence, problem behavior
	Recognition for, involvement in conventional activities	No	Violence, antisocial behavior
Peer Group	Friends who engage in conventional behavior	No	Violence, antisocial behavior

reanalysis of the 1995 study data (Turbin, 2000), as well as on results from other studies, bearing in mind the caveats noted above.

The 1995 Jessor study grouped possible protective factors together and found that students who scored high on this index of protection were buffered from the effects of risk, compared to students who scored low on the index. The index was composed of seven psychosocial protective factors: attitudinal intolerance of deviance, positive orientation to health, religiosity, positive relations with adults, perceived consequences for misbehavior, friends as models for conventional behaviors, and high involvement in conventional activities. In an analysis of specific factors, however, only two—an intolerant attitude toward deviance and commitment to school—had significant protective effects. The new findings show that the same two factors appear to exert a significant, though small, buffering effect on risk factors for violence.

Proposed Protective Factors by Domain

One of the proposed protective factors shown to have a buffering effect on the risk of violence is an individual characteristic, and the other falls into the domain of school; both are classed as having a small effect. No other factors in the individual, family, school, or peer group domains have been shown to exert significant buffering effects on risk factors for violence, although they have been shown to moderate the risk of antisocial behavior or delinquency. No protective factors have been proposed yet in the community domain.

Individual

An intolerant attitude toward deviance, including violent behavior, is the strongest proposed protective factor. It reflects a commitment to traditional values and norms as well as disapproval of activities that violate these norms. Young people whose attitudes are antithetical to violence are unlikely to become involved in activities that could lead to violence or to associate with peers who are delinquent or violent.

The four remaining individual factors have not yet been shown to moderate violence, although they may buffer risks for antisocial behavior or general delinquency. High IQ has been cited as a possible protective factor (Fergusson & Lynskey, 1996; Garmezy, 1985; Rutter, 1985; Werner & Smith, 1982). Children with above-average IQs may exhibit qualities, such as curiosity and creativity, that help them make the most of early educational, artistic, and cultural experiences. Above-average IQ can also help a child excel in school. High IQ may increase an adolescent's chances of benefiting from educational, creative, and cultural opportunities. For youths facing multiple risk factors, exposure to the wider world may open a window on alternative values and lifestyles.

Being born female has also been cited (Garmezy, 1985; Rutter, 1985; Werner & Smith, 1982), but it is the opposite of being born male, a risk factor, and as yet there is no evidence of a buffering effect. Being a girl entails less exposure to violence, less impulsiveness and daring, and being expected to behave less aggressively than boys.

Some studies have proposed positive social orientation as a protective factor (Garmezy, 1985; Jessor et al., 1998; Rutter, 1985; Werner & Smith, 1982). Like commitment to school, a positive social orientation indicates that a young person has adopted traditional values and norms, a slightly different emphasis than intolerance of deviance. This proposed factor appears to be the opposite of antisocial attitudes and beliefs, a late-onset risk factor that has a small effect size.

Perceived sanctions for transgressions, a protective factor in the earlier Jessor study (1995), refers to perceived peer disapproval of deviant behavior. The reanalysis of those original data reveals that this proposed factor has no significant protective effect on risk of violence or problem behavior.

Family

There is no doubt that an essential aspect of healthy child development is forming a secure attachment in infancy to a parent or other adult who senses and responds to a baby's needs (Bell & Fink, 2000). Likewise, researchers agree that having a loving adult who is interested in and supportive of a child or young person's ideas and activities helps that child or adolescent develop the confidence and competence needed to progress from one stage of development to the next. Good relations with an adult who supports conventional behavior and disapproves of delinquent behavior can provide invaluable guidance for young people. The question is whether these relationships moderate the effects of exposure to risk and thus fit the definition of a protective factor.

A warm, supportive relationship with parents or other adults has been shown to protect against antisocial behavior, but studies so far have not found a significant buffering effect on the risk of violence (Hawkins et al., 1998c; Klein & Forehand, 2000; Rutter, 1979; Turbin, 2000; Werner & Smith, 1992).

It is uncertain whether family protective factors, like family risk factors, become less influential as young people progress through adolescence. Parental support and encouragement remain important, but even parents who have had a good relationship with their children before puberty may affect their adolescents' behavior only indirectly—for example, through choice of friends (Elliott et al., 1989). This indirect influence is not inconsequential, however; associating with peers who disapprove of violence may inhibit later violence in young people (Hawkins et al., 1998c), and parents' positive evaluation of peers has been found to reduce the risk of delinquency (Smith et al., 1995).

Several studies have pointed to monitoring or supervision of activities as a protective factor against delinquency and antisocial behavior, but this is essentially the opposite of failure to monitor, an adolescent-onset risk factor with a small effect size. To date, no evidence of moderating effects on the risk of violence has been presented (Baldwin et al., 1990; Klein & Forehand, 2000; Smith et al., 1995).

School

Commitment to school is the second proposed protective factor that has been found to buffer the risk of youth violence. Young people who are committed to school have embraced the goals and values of an influential social institution. Such young people are unlikely to engage in violence, both because it is incompatible with their orientation and because it would jeopardize their achievement in school and their standing with adults (Jessor et al., 1995; Turbin, 2000). This proposed factor is included because it appears to buffer the risk of violence, not because it is the opposite of poor attitude toward or performance in school, a risk factor with small effect sizes in both childhood and adolescence.

School can give adolescents who face multiple risk factors a place in which to excel socially and academically. Achievement in school and the approval of teachers provide the recognition so important to adolescent development—recognition some adolescents do not receive from other sources. Encouragement from teachers can give young people the confidence to seek continued educational or job skills training. In addition, schools with peer groups that value academic achievement may lower students' risk of becoming involved in violence (Felson et al., 1994). Unfortunately, schools with a culture of violence may be unable to exert their very important protective function.

Extracurricular activities in art, music, drama, school publications, and the like give adolescents an opportunity to participate in constructive group activities and achieve recognition for their efforts. Studies have found that recognition for or involvement in conventional activities—whether family, school, extracurricular, religious, or community—is a protective factor against antisocial behavior (Jessor et al., 1995; Rae-Grant et al., 1989). The reanalysis of the Jessor data shows that involvement in family, volunteer, and school club activities other than sports has an insignificant effect on risk for violence (Turbin, 2000).

Peer Group

Having friends who behave conventionally is a proposed protective factor that seems to reduce the risk of delinquency, but there is no evidence of a true buffering effect on specific risk factors. Buffering effects on violence were not significant in the reanalysis of the Jessor data (Turbin, 2000; see also Smith et al., 1995). However, as noted earlier, researchers have found that associating with peers who disapprove of violence may inhibit violence in young people (Hawkins et al., 1998c; Jessor et al., 1995).

Summary

Although the body of research on protective factors is growing, very little work has been done specifically on protective factors that buffer the risk of violence. Some researchers have identified individual and environmental characteristics that can be considered candidates for protective factors. Lacking adequate scientific evidence of the nature, mechanism, size, and timing of these candidates' moderating effects, however, this report considers all of them proposed protective factors.

One recent reanalysis of earlier data has found two proposed protective factors that seem to buffer the risk of violence—an intolerant attitude toward deviance and commitment to school. These two factors appear to exert a statistically significant, though small, buffering effect on the risk of violence, but until these findings are replicated, they must be considered preliminary.

Identifying and understanding how protective factors operate is as important to preventing and stopping violence as identifying and understanding risk factors. This area of the public health approach to youth violence cries out for more research.

CONCLUSIONS

Scientists have identified a number of personal characteristics and environmental conditions that put children and adolescents at risk of violent behavior and some that seem to protect them from the effects of risk. These risk and protective factors can be found in every area of life, they exert different effects at different stages of development, they tend to appear in clusters, and they appear to gain strength in numbers. The public health approach to youth violence involves identifying risk and protective factors, determining when in the life course they typically come into play, designing preventive programs that can be put in place at just the right time to be most effective, and making the public aware of these findings.

Many years of research have yielded valuable insights into the risk factors involved in the onset and developmental course of violence. Less work has been done on protective factors, but that situation is changing. Some basic principles have emerged from these studies:

- Risk and protective factors exist in every area of life—individual, family, school, peer group, and community. Individual characteristics interact in complex ways with a child's or adolescent's environment to produce violent behavior.
- Risk and protective factors vary in predictive power depending on when in the course of human development they occur. As children move from infancy to early adulthood, some risk factors will become more important and others less important. Substance use, for example, is a far more powerful risk factor at age 9 than it is at age 14.
- Risk factors do not operate in isolation—the more risk factors a child or young person is exposed to, the greater the likelihood that he or she will become violent. Risk factors can be buffered by protective factors, however. An adolescent with an intolerant attitude toward violence is unlikely to engage in violence, even if he or she is associating with delinquent peers, a major risk factor for violence at that age.
- Risk factors increase the likelihood that a young person will become violent, but they may not actually cause a young person to become violent. Scientists view them as reliable predictors or even as probable causes of youth violence. They are useful for identifying vulnerable populations that may be amenable to intervention efforts.
- Risk markers such as race or ethnicity are frequently confused with risk factors; risk markers have no causal relation to violence.
- No single risk factor or combination of factors can predict violence with unerring accuracy. Few young people exposed to a single risk factor will become involved in violent behavior; similarly, most young people exposed to multiple risks will not become violent. By the same token, protective factors cannot guarantee that a child exposed to risk will not become violent.
- Researchers have identified at least two onset trajectories for youth violence: a childhood trajectory that begins before puberty and an adolescent one that begins after puberty. Violence peaks during the second decade of life. The small group of offenders who began their violent behavior in childhood commits more violent offenses, and the larger group of adolescent offenders begins to become involved in violence.
- Early risk factors for violence in adolescence include involvement in serious (but not necessarily violent) criminal acts and substance use before puberty, being male, aggressiveness, low family socioeconomic status/poverty, and antisocial parents. All of these early risks stem from a child's individual characteristics and interaction with his or her family. The influence of family is largely supplanted in adolescence by peer influences; thus, risk factors with the largest predictive effects in adolescence include weak social ties to conventional peers, ties to antisocial or delinquent peers, and belonging to a gang. Committing serious (but not necessarily violent) criminal offenses is also an important risk factor in adolescence. Drug selling is a risk factor, but its effect size has not been established.
- Identifying and understanding how protective factors operate is potentially as important to preventing and stopping violence as identifying and understanding risk factors. Several protective factors have been proposed, but to date only two have been found to buffer the risk of violence—an intolerant attitude toward deviance and commitment to school. Protective factors warrant more research attention.

Violence prevention and intervention efforts hinge on identifying risk and protective factors and determining when in the course of development they emerge. More research in these areas is needed, particularly concerning why violence stops or continues in childhood and adolescence. Nonetheless, the research carried out to date provides a solid foundation for programs aimed at reducing risk factors and promoting protective ones—and thereby preventing violence, the subject of Chapter 5.

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APPENDIX 4–A

LIPSEY AND DERZON'S CLASSES OF RISK FACTORS

Antisocial Behavior

- ***Physical Violence***
  - Violence, physical
  - Violence, recidivism
- ***Aggression***
  - Aggressive and disruptive behavior
  - Aggression, cannot tell
  - Aggression toward objects
  - Verbal aggression
- ***Person crimes***
  - Crimes against persons
  - Sexual offenses
  - Violence, mixed
- ***General offenses***
  - Crime, index/serious
  - Crimes, mixed
  - Property crimes
  - Recidivism
  - Status offenses
- ***Problem behavior***
  - Aggressively inclined
  - Antiestablishment
  - Antisocial behavior
  - Poor behavior rating
  - Problem behavior
  - Temper tantrums
  - Undesirable temperament
- ***Substance use***
  - Illicit drug use
  - Alcohol use
  - Tobacco use

Personal Characteristics

- ***Gender***
  - Male gender
- ***Ethnicity***
  - Minority race
- ***IQ***
  - Learning problems
  - Low IQ
  - Low IQ, nonverbal
  - Low IQ, verbal
  - Low language ability
- ***Medical/physical***
  - Developmental history
  - Medical conditions
  - Medical examinations
  - Physical development
- ***School attitude/performance***
  - Dropped out from school
  - Low interest in education
  - Low school achievement
  - Poor-quality school
  - Truancy
- ***Psychological condition***
  - Behavior characteristics
  - High activity level
  - High daring
  - Impulsiveness
  - Poor eating habits
  - Psychopathology
  - Short attention span

Family Characteristics

- ***Antisocial parents***
  - Criminal parent
  - Parent psychopathology
  - Parent violent
- ***Abusive parents***
  - Child emotional abuse
  - Maltreated as child
  - Neglected as child
  - Physically abused as child
  - Sexually abused as child
- ***Broken home***
  - Broken home
  - Separated from parents
- ***Parent-child relations***
  - Discipline, mixed
  - Discipline, punitive
  - Low parent involvement
  - Low supervision
  - Low warmth
  - Negative attitude to child
  - Poor parent-child relations
  - Poor parental practices
  - Severity in child training
- ***Socioeconomic status***
  - Low SES, family
  - Low SES, juvenile
  - Low-quality neighborhood
  - Low-status job, parents
  - Not employed, juvenile
- ***Other family characteristics***
  - Parent background
  - High family stress
  - Large family size
  - Marital discord
  - Social
- ***Social ties***
  - Few social activities
  - Low popularity
- ***Antisocial peers***
  - Antisocial peers
  - Peer criminality
  - Peer normlessness

APPENDIX 4–B

VIOLENCE IN THE MEDIA AND ITS EFFECT ON YOUTH VIOLENCE

Americans have been concerned about the prevalence of violence in the media and its potential harm to children and adolescents for at least 40 years. The body of research on television violence has grown tremendously since the first major Federal reports on the subject in 1972 and 1982 (National Institute of Mental Health, 1982; U.S. Surgeon General's Scientific Advisory Committee on Television and Social Behavior, 1972). During this period, new media emerged—video games, cable television, music videos, and the Internet. As they gained popularity, these media, along with television, prompted public concern and research attention.

Recent surveys depict the abundance of (primarily electronic) media in U.S. homes (Roberts et al., 1999; Woodard, 1998) and the extensive presence of violence within the media landscape (Wilson et al., 1997, 1998). They also show that the proliferation of new media has expanded the opportunities for children to be exposed to media violence at home. Current psychological theory suggests that the interactive nature of many of these new media may affect children's behavior more powerfully than passive media such as television. Research to test this assumption is not yet well developed, and accurate measurement is needed to determine how much violence children are actually exposed to through various media—and how patterns of exposure vary among American youths.

In reading this discussion of research on the impact of media violence on America's youth, a few major points should be kept in mind:

- First, research on the effects of media violence examines many kinds of outcomes in young people. Researchers have focused primarily on aggression, an outcome that psychologists define as any behavior, physical or verbal, that is intended to harm another person. Physical aggression may range from less serious acts, such as pushing or shoving, to more serious physical contact and fighting, to very serious violent acts that carry a significant risk of injury or death, such as assault, robbery, rape, and homicide. Some studies have focused on how media violence affects aggressive thinking, including beliefs and attitudes. Other studies have focused on the effects of media violence on aggressive emotions—that is, on emotional reactions, such as anger, that are related to aggressive behavior. In this discussion, the label "violence" is reserved for the most extreme end of the physical aggression spectrum.
- Second, as noted in Chapter 4, the preponderance of evidence indicates that violent behavior seldom results from a single cause; rather, multiple factors converging over time contribute to such behavior. Accordingly, the influence of the mass media, however strong or weak, is best viewed as one of the many potential factors that help to shape behavior, including violent behavior.
- Third, a developmental perspective is essential for understanding how media violence affects youth behavior and for framing any coherent public health response to it. Although this report focuses generally on the violent behavior of adolescents, it is critical to understand how children are influenced by and respond to media violence, especially in order to recognize and help those who are particularly susceptible to adverse effects. Most youths who are aggressive and engage in some forms of antisocial behavior do not become violent teens and adults. However, it is well established that many violent adolescents and adults were highly aggressive and

even violent at younger ages, and the highly aggressive child is at increased risk of growing up to be a more aggressive young adult (Nagin & Tremblay, 1999). Because influences that promote aggressive behavior in some young children can contribute to increasingly aggressive and even violent behavior many years later, it is important to understand the early factors that may play a role in later outcomes.

- Fourth, a growing body of research supports theories that explain how exposure to media violence would activate aggressive behaviors or attitudes in some children. Humans begin imitating other individuals at a very early age, and young children learn many motor and social skills by observing the behavior of others (Bandura, 1977). Social interactions shape the scripts for behavior that children acquire, but observational learning is a powerful mechanism for acquiring social scripts throughout childhood (Huesmann, 1998). Most researchers agree that such observational learning is probably the major psychological process underlying the effects of media violence on aggressive behavior. This same process could explain how prosocial behavior depicted in the media might encourage positive behavior in children (Friedlander, 1993; Harold, 1986; Mares, 1996).

MEDIA VIOLENCE: EXPOSURE AND CONTENT

American children and youths spend, on average, more than 4 hours a day with television, computers, videotaped movies, and video games (Roberts et al., 1999; Woodard, 2000). But their exposure to media varies considerably, depending on their age, parental viewing habits, and family socioeconomic status (SES). Most systematic research on children's exposure to violent media dates back to the 1970s, when most families did not have access to cable television, music videos, video games, or the Internet. As noted earlier, very few contemporary studies systematically document children's actual consumption of violent media; this is particularly true for the newer media.

Several content analyses over the last 30 years have systematically examined violence on television (Gerbner et al., 1980; Potter et al., 1995; Signorielli, 1990). The largest and most recent of these was the National Television Violence Survey (NTVS)[1] (Wilson et al., 1997, 1998), which examined the amount and content of violence[2] on American television for three consecutive years, as well as contextual variables that may make it more likely for aggression and violence to be accepted, learned, and imitated. Smith and Donnerstein (1998) report the following NTVS findings:

- 61 percent of television programs contain some violence, and only 4 percent of television programs with violent content feature an "antiviolence" theme.
- 44 percent of the violent interactions on television involve perpetrators who have some attractive qualities worthy of emulation.
- 43 percent of violent scenes involve humor either directed at the violence or used by characters involved with violence.
- Nearly 75 percent of violent scenes on television feature no immediate punishment for or condemnation of violence.
- 40 percent of programs feature "bad" characters who are never or rarely punished for their aggressive actions.

The NTVS report notes that many television programs fail to depict the harmful consequences of violence. Specifically, it finds that of all violent behavioral interactions on television, 58 percent depict no pain, 47 percent depict no harm, and 40 percent depict harm unrealistically. Of all violent scenes on television, 86 percent feature no blood or gore. Only 16 percent of violent programs feature the long-term, realistic consequences of violence.

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[1] The NTVS randomly sampled programs from 6:00 a.m. to 11:00 p.m. on 23 broadcast and cable channels over a 20-week period from October to June during the 1994 through 1997 viewing seasons. A sum of 119 hours per channel, or 2,500 hours of television programming, was assessed each year.

[2] The NTVS defined violence as "overt depiction of a credible threat of physical force, or the actual use of such force intended to physically harm an animate being or group of beings." Content analyses of television programs generally treat the program itself as the unit of analysis and exclude advertisements."Violence also includes certain depictions of physically harmful consequences against an animate being or group that occur as a result of unseen violent means. Thus, there are three primary types of violent depictions: credible threats, behavioral acts, and harmful consequences" (Smith & Donnerstein, 1998, p. 170).

MAJOR BEHAVIORAL EFFECTS OF MEDIA VIOLENCE

Because an exhaustive description of the research literature is not possible within this brief discussion, findings from meta-analyses are reported[3] where available. In meta-analyses, the results of multiple studies are combined and compared systematically and an overall effect size computed. These analyses include findings from randomized experiments that look at aggression immediately after viewing violence, as well as cross-sectional surveys that provide a snapshot of the relationship between viewing violence and behavior at a fixed point in time. Also presented are findings from longitudinal studies that examine whether exposure to media violence affects violence and aggression over time.

Television and Film Violence

Many anecdotal reports have described instances in which television and film violence led to immediate violent behavior in individual children, but scientific studies of this relationship draw a more complex and qualified picture. Most of the relevant research has focused on how watching dramatic violence on television and film affects aggressive thoughts and emotions, as well as aggressive behavior. Some important studies address violence as well.

Experimental Studies

A substantial number of laboratory and field experiments over the past half-century have examined whether children exposed to violent behavior on film or television behave more aggressively immediately afterwards (see reviews by Bushman & Huesmann, 2000; Comstock & Scharrer, 1999; Geen, 1990; Geen & Thomas, 1986; Huesmann et al., 1997). Many studies have also examined the immediate effect of media violence on aggressive thoughts or emotions (Rule & Ferguson, 1986), which have been shown to increase the risk of aggressive behavior (Dodge & Frame, 1982; Huesmann & Guerra, 1997).

The most recent and comprehensive meta-analysis of media violence was conducted by Paik and Comstock (1994), who examined effect sizes from 217 empirical studies on media violence and aggressive and violent behavior published between 1957 and 1990. The analysis indicates clearly that brief exposure to violent dramatic presentations on television or in films causes short-term increases in the aggressive behavior of youths, including physically aggressive behavior. Across all the randomized experiments, the unweighted average effect size was large ($r = .37$).[4] When only experiments examining physical aggression as the outcome were examined, the effect size was also large ($r = .32$).

Although the experimental methods used in these studies enable researchers to test causality more readily than other research methods as noted by Comstock and Paik (1991), the findings may not necessarily apply to all real-world settings. Because experiments are narrowly focused on testing specific causal hypotheses, they do not examine the effects of all factors that might be present in more realistic situations. This means that some real-world influences might actually lessen or even eliminate the aggressive reactions observed in experiments. For example, while television, film, and other media contain a variety of antisocial and other messages, most laboratory studies to date have exposed study participants primarily to violent materials. In addition, participants may react differently in the laboratory when they realize that their expressions of aggression will not be punished (Gunter, 1983). Any summary of these experimental results should also acknowledge the argument raised by some critics (such as Freedman, 1992) that many study participants provide the responses they believe the researcher wants. Despite these limitations, laboratory experiments are important because they allow researchers to isolate the unique effect of exposure to violence on subsequent behavior.

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[3] In the text to follow, all reported results are statistically significant ($p < .05$).

[4] In this study, all effects are unweighted average effects.

An important general finding from these experimental studies is that not all youths seem to be affected equally by media violence. Effects seem to be strongest on youths who are predisposed to be aggressive for some reason or who have been aroused or provoked (Berkowitz, 1993; Bushman, 1995; Geen & O'Neal, 1969).

Cross-Sectional Surveys

Cross-sectional surveys over the past 40 years have generally focused on establishing a link between the current aggressiveness of children and the amount of television and film violence they watch regularly (see reviews by Bushman & Huesmann, 2000; Chaffee, 1972; Comstock & Scharrer, 1999; Eysenck & Nias, 1978; Huesmann & Miller, 1994).

Paik and Comstock's meta-analysis (1994) indicates that in cross-sectional surveys viewing media violence was positively correlated with various measures of aggression. They reported small to moderate effect sizes across all measures of aggression ($r = .19$) and for physical aggression alone ($r = .20$). For the outcome of most concern to this report—criminal violence against a person—the effect size was small ($r = .06$). These results suggest that the link between media violence and aggressive behavior found in laboratory studies may also hold for behaviors outside the laboratory. However, cross-sectional surveys do not by themselves indicate whether media violence is causing aggression, whether aggressive youths are attracted to media violence, or whether some other factor is predisposing some youths to watch more violence and behave more aggressively.

Longitudinal Studies

Long-term studies in which exposure to media violence in early childhood is related to later aggression and violence (such as aggravated assault, robbery, rape, and homicide) can identify the enduring effects of media violence. In most such studies to date, however, aggression, not violence, has been the primary outcome measured. In the absence of a meta-analysis, the findings of three frequently cited longitudinal studies on the effects of media violence are discussed briefly below. Studies examining effects over shorter time periods (Singer et al., 1984) or with international samples (Huesmann & Eron, 1986) are not included here.

In a study begun in 1960 on a sample of 875 youths in New York State, Eron and colleagues found that for boys, but not for girls, exposure to media violence at age 8 was significantly related to aggressive behavior a decade later ($r = .31$, $N = 211$, $p < .01$) (Eron et al., 1972; Lefkowitz et al., 1977). At both times, peers assessed physical and verbal aggression. The longitudinal correlation remained above .25, even in separate analyses statistically controlling for factors such as the child's initial aggressiveness, the child's intelligence, family SES, parents' aggressiveness, and parents' punishment and nurturance of the child.

Milavsky et al. (1982) examined the probability of initiating aggression after exposure to violence on television in 2,400 boys and girls age 7 to 12 from two midwestern cities who had been surveyed up to six times between 1970 and 1973. A sample of 800 teenage boys[5] was studied at five times to identify the effect of violent television on aggression and violence. For the elementary school sample, the average cross-sectional correlation between exposure to media violence and personal aggression was small for boys ($r = .17$) and large for girls ($r = .30$). The researchers then attempted to predict aggressive behavior at one point in time from the extent to which children viewed television violence at an earlier time, while controlling for earlier aggressive characteristics. They examined this prediction over 15 time intervals ranging from 5 months to 3 years apart. For elementary school boys, only 2 of the 15 predictions at different intervals were statistically significant. For girls, only three predictions were statistically significant. In the teenage male sample, only one of eight correlations was significant. In only one of nine analyses using measures of violence (for example, knife fight, car theft, mugging, gang fight) were boys with greater exposure to television violence more likely to initiate violence 2 years later than those with less exposure.

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[5] These predictions are based on subsamples from which many of the most aggressive children had been dropped by the research team, reportedly because they were not accurately describing their television viewing.

The third longitudinal study of media violence effects began in the late 1970s and spanned five countries (Huesmann et al., submitted; Huesmann et al., 1984; Huesmann & Eron, 1986). In each locale, samples of middle-class youths were examined three times between age 6 to 8 or age 8 to 11. Both physical and verbal aggression were assessed by peers. The correlations between aggression and overall viewing of television violence at a single point in time were small to moderate and often significant. In the United States, the 3-year average correlation was moderate for boys and for girls ($r = .25$ and $r = .29$, respectively; $p < .001$). The predictive power of viewing television violence for childhood aggression a year later varied substantially. In the United States, girls' viewing of television violence had a significant effect ($\beta = .17$, $N = 89$, $p < .05$) on their later aggression, even after accounting for early levels of aggression, SES, and scholastic achievement. For boys, television violence alone did not predict later aggression. When the investigators took into account both exposure to television violence and identification with aggressive television characters, they found a positive relation with aggressiveness ($\beta = .19$, $N = 84$, $p < .05$).

A follow-up study of over 300 people in the U.S. sample 15 years later suggested that media violence has a delayed effect on aggression (Huesmann et al., submitted). There was a small to moderate longitudinal correlation between childhood television viewing and a composite measure of young adult aggression (physical, verbal, and indirect aggression) for both men ($r = .21$, $N = 153$, $p < .01$) and women ($r = .19$, $N = 176$, $p < .01$). When the outcome was limited to physical aggression, the correlations were smaller ($r = .17$ and $r = .15$, respectively). Furthermore, women who had watched relatively more television violence as girls committed significantly more specific acts of violence as adults, such as "punching, beating, or choking another adult," than did the other women (17 percent versus 4 percent). There were no significant differences among the men. Other analyses showed that effects remained significant even when researchers controlled for parent education and children's scholastic achievement ($\beta = .19$ for boys, $\beta = .17$ for girls, $p < .05$). In addition, aggressive behavior did not significantly increase boys' or girls' viewing of television violence ($\beta = .08$ for boys and $\beta = .04$ for girls; $p =$ ns).

In summary, these longitudinal studies show a small, but often statistically significant, long-term relationship between viewing television violence in childhood and later aggression, especially in late adolescence and early adulthood. Some evidence suggests that more aggressive children watch more violence, but the evidence is stronger that watching media violence is a precursor of increased aggression.

Other Studies

Other studies have explored the behavioral impact of introducing television in several countries (Centerwall, 1989a, 1989b, 1992; Joy et al., 1986; Williams, 1986). These studies indicate that when television was introduced, aggression and violence increased. The findings must be viewed with caution, however, because they do not take into account a range of other factors that may influence national crime rates and the amount of violence watched on television.

Despite anecdotal reports of a "contagion of violence," relatively little systematic research has examined whether seeing or hearing about violence in news coverage encourages violent or aggressive behavior. On the whole, the limited data available support the notion of a contagion effect. This evidence is derived from studies examining how reports of a well-known person's suicide affect the likelihood of imitative suicide (Phillips, 1979, 1982; Simon, 1979; Stack, 1989). Other studies of the contagion effect (Berkowitz & Macaulay, 1971; Phillips, 1983) have been questioned because of their research methods and the ambiguity of their results (Baron & Reiss, 1985; see Phillips & Bollen, 1985 for a response). This area merits additional research.

Violence in Other Media

Internet

Theoretically, the effects of exposure to media violence extend to Internet media as well. To date, however, no studies have been published regarding the effects of Web-based media violence on youth aggression and violence.

Music Videos

A relatively small amount of research has focused on the impact of music videos with violent or antisocial themes (Baxter et al., 1985; Caplan, 1985; Hansen & Hansen, 1990; Johnson et al., 1995a, 1995b; Rich et al., 1998). Randomized experiments indicate that exposure to violent or antisocial rap videos can increase aggressive thinking, but no research has yet tested how such exposure directly affects physical aggression.

Video Games

The impact of video games containing violence has recently become a focus of research because children are theoretically more susceptible to behavioral influences when they are active participants than when they are observers. To date, violent video games have not been studied as extensively as violent television or movies. The number of studies investigating the impact of such games on youth aggression is small, there have been none on serious violence, and none has been longitudinal.

A recent meta-analysis of these studies found that the overall effect size for both randomized and correlational studies was small for physical aggression (r = .19) and moderate for aggressive thinking (r = .27) (Anderson & Bushman, in press). In separate analyses, the effect sizes for both randomized and cross-sectional studies was small (r = .18 and .19, respectively). The impact of video games on violent behavior remains to be determined.

Potential Moderators of Behavioral Effects

Research suggests that not all youths are affected in the same way by viewing media violence. Factors that appear to influence the effects of media violence on aggressive or violent behavior include characteristics of the viewer (such as age, intelligence, aggressiveness, and whether the child perceives the media as realistic and identifies with aggressive characters) and his or her social environment (for example, parental influences), as well as aspects of media content (including characteristics of perpetrators, degree of realism and justification for violence, and depiction of consequences of violence).

Evidence that these factors moderate the influence of media violence is limited, and it is more relevant to aggression than to violence. For example, studies of responses to violent television and films and violent video games have found that people who were initially more aggressive than other subjects were more affected in behavior, thoughts, and emotions (Anderson & Dill, 2000; Bushman, 1995; Bushman & Geen, 1990; Friedrich & Stein, 1973; Josephson, 1987). Research in this area clearly suggests that the impact of violent television, film, and video games on aggression is moderated by viewers' aggressive characteristics.

Evidence that other individual, environmental, and content factors moderate the effects of exposure to media violence is less clear. Some studies suggest that these factors may buffer or enhance effects, but few have tested for such influences. Although limited in scope and depth, such studies provide clues to potential avenues for prevention efforts. For example, preliminary data point to the potentially vital role of parents in supervising their children's exposure to violent media and in helping them interpret it (Nathanson, 1999).

SUMMARY OF MAJOR EMPIRICAL RESEARCH FINDINGS

A substantial body of research now indicates that exposure to media violence increases children's physically and verbally aggressive behavior in the short term (within hours to days of exposure). Media violence also increases aggressive attitudes and emotions, which are theoretically linked to aggressive and violent behavior. Findings from a smaller body of longitudinal studies suggest a small but statistically significant impact on aggression over many years. The evidence for long-term effects on violence is inconsistent.

Based on the findings of studies reported here, the average effect sizes of exposure to media violence on various measures of aggression range from small (r = .15) to quite large (r = .64). The evidence that exposure to media violence is a risk factor for violent behavior is more limited, with small average effect sizes of r = .06 in cross-sectional surveys, r = .13 in experimental studies (Paik & Comstock, 1994), and r = .00 to .22 in longitudinal studies (Huesmann et al., submitted; Milavsky et al., 1982). Taken together, findings to date suggest that media violence has a relatively small impact on violence. The effect on aggression is stronger, ranging from small to moderate.

Although there is clear scientific evidence of a correlation between exposure to media violence and some violent behaviors, randomized experiments—the research methodology best suited to determining causality—cannot ethically be used in studies of violent behavior. Thus, the causal links between media violence and behavior are more firmly established for aggressive behavior than for violent behavior. Longitudinal studies, which also provide some insights into this issue, have linked repeated exposure to media violence in the early years with an increased likelihood of aggressive behavior in the teen and adult years. However, few of these studies have reported on violence as an outcome. Moreover, the violent behaviors that are the focus of this report (homicide, forcible rape, aggravated assault, and robbery) occur infrequently and are subject to multiple influences. At present, it is extremely difficult to distinguish between the relatively small, long-term effects of media exposure and those other influences.

In sum, a diverse body of research provides strong evidence that exposure to violence in the media can increase children's aggressive behavior in the short term. Some studies suggest that long-term effects exist, and there are strong theoretical reasons why this is the case. But many questions remain regarding the short- and long-term effects of media violence, especially on violent behavior. Despite considerable advances in research, it is not yet possible to describe accurately how much exposure, of what types, for how long, at what ages, for what types of children, or in what types of settings will predict violent behavior in adolescents and adults.

PREVENTIVE EFFORTS

Efforts to reduce the presumed harmful effects of media violence on youths have taken various forms, including:

- Attempting to reduce the amount of media violence and children's access to it (for example, calls for media self-regulation and violence ratings);
- Encouraging and facilitating parental monitoring of children's access to media (for example, V-chip legislation and advisory labels on music and video games);
- Educating parents and children about the potential dangers of media violence (for example, media and empathy educational programs); and
- Targeting children's views about violence to reduce the chances that they will imitate the violence they see (Corder-Bolz, 1980; Hicks, 1968; Huesmann et al., 1983; Linz et al., 1990; Nathanson, 1999).

From a public health perspective, this preventive domain is largely uncharted territory. Few preventive efforts have been studied systematically. Furthermore, not enough research has been done to form a basis for the design of many experimental interventions. As noted in other parts of this report, an extensive body of scientific research undergirds our emerging knowledge about effective ways of preventing youth violence. Although many violence prevention programs address a complex array of risk and protective factors in the lives of young people, they have not yet addressed the role of the media. This gap needs to be filled.

IMPLICATIONS

Research to date justifies sustained efforts to curb the adverse effects of media violence on youths. Although our knowledge is incomplete, it is sufficient to develop a coherent public health approach to violence prevention that builds upon what is known, even as more research is under way. Unlike earlier Federal research reports on media violence and youth (National Institute of Mental Health, 1982; U.S. Surgeon

General's Scientific Advisory Committee on Television and Social Behavior, 1972), this discussion takes place within a broader examination of the causes and prevention of youth violence. This context is vital. It permits media violence to be regarded as one of many complex influences on the behavior of America's children and young people. It also suggests that multilayered solutions are needed to address aggressive and violent behavior.

A variety of media violence is present in the homes of young children, with considerable variation in the degree of parental supervision (Woodard, 1998). Regardless of government and other interested groups' attempts to limit the amount of violence reaching American families, families themselves play a critical role in guiding what reaches their children. Whether by adopting V-chip technology for home television programming, by using Internet violence screening, or simply by monitoring closely children's use of televisions, computers, and video games, parents can limit and shape their children's selection of, interaction with, and response to media violence. Community groups—including schools, faith-based organizations, and Parent Teacher Associations—can teach parents and children how to be more critical consumers of media. Federal agencies can be more active in encouraging needed research, in sharing research findings with the public, in encouraging increased interaction between violence prevention researchers and media researchers, and in creating networks for sharing solutions to social and public health problems.

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CHAPTER 5

PREVENTION AND INTERVENTION

Shootings and deaths in schools throughout the United States have left parents believing that their communities are no longer safe from the most extreme examples of youth violence (Gallup, 1999). This perception, combined with the increased lethality of youth violence in the early 1990s, has lent urgency to the search for effective violence prevention efforts. Hundreds of youth violence prevention programs are being used in schools and communities throughout the country, yet little is known about the actual effects of many of them (Gottfredson et al., 2000; Tolan & Guerra, 1994). Few such programs have been rigorously evaluated, including many ongoing efforts (Elliott, 1998). The evaluations that have been done indicate that much of the money America spends on youth violence prevention is spent on ineffective—sometimes even harmful—programs and policies (Mendel, 2000).

At the same time, researchers know much more today about how to prevent youth violence than they did two decades ago, when some declared that "nothing works" to prevent violence (Lipton et al., 1975; Sechrest et al., 1979). This is clearly no longer the case. Over the past few decades, social scientists have made great strides in uncovering the causes and correlates of youth violence.

Unfortunately, the news about effective programs has been slow to bring about change in school, community, and juvenile justice system prevention efforts, where precious resources continue to be spent on ineffective programs. Some experts believe that youth crime and violence rates could be "substantially" reduced simply by reallocating the money now spent on ineffective policies and programs to those that do work (Mendel, 2000, p. 1).

The strategy of using prevention resources to their fullest potential presents many challenges. The first lies in identifying effective prevention approaches and programs. Differentiating between effective and ineffective ones can be a difficult chore for schools, communities, and juvenile justice authorities. Numerous agencies and organizations have published recommendations on "what works" in youth violence prevention, but in many cases there is little consistency regarding the specific programs they recommend. The reason for this inconsistency is a lack of uniformly applied scientific standards for what works.

PROMOTING HEALTHY, NONVIOLENT CHILDREN

This chapter identifies a set of standards based on scientific consensus and applies those standards to the literature on youth violence prevention in order to identify with confidence general strategies and programs that work, that are promising, or that do not work to prevent youth violence. This information can be used by schools, communities, juvenile justice agencies, program funders, and others interested in youth violence prevention to aid their programming decisions. With this information in hand, it may be possible to fulfill the prediction that better use of existing prevention resources can substantially reduce the problem of youth violence.

The first section of this chapter describes the methods used in this report to identify best practices in youth violence prevention. The second describes currently accepted scientific standards for determining program effectiveness. The third section applies those standards to the existing youth violence prevention literature and presents findings on best practices—what works, what is promising, and what does not work. The information in that section is based on currently available research and is not intended to be the final word on the subject. As more programs are evaluated, the standards outlined in this report can be used to identify additional programs and strategies that work in preventing youth violence.

The fourth section, on cost-effectiveness, is intended to enhance the information provided in the best practices section by adding another dimension to the determination of what works. The conclusion discusses the need to take the next step in preventing youth violence by learning how to preserve the benefits of successful prevention programs when implementing them on a national scale.

METHODS OF IDENTIFYING BEST PRACTICES

Identifying the best practices for preventing youth violence involves two approaches, each with its own limitations. The first is meta-analysis, a rigorous statistical method of combining the results of several studies to obtain more reliable estimates of the effects of a general type of treatment or intervention. This quantitative approach can be used to summarize program evaluation evidence and draw overall conclusions about the strength and consistency of the influence, or effect size, that particular types of programs have on violent behavior. In the field of youth violence, meta-analysis has been used primarily for evaluations of interventions with violent or delinquent youths.

The second, less empirical approach is to review the evaluation research and identify the general strategies that characterize effective programs. While such reviews are not quantitative, they are more easily conducted than meta-analyses, and they offer useful information for generating hypotheses and drawing general conclusions about the effectiveness of various strategies for preventing youth violence.

In identifying best practices, this report relies heavily on recently published reviews and focuses mainly on strategies and programs with demonstrated effects on youth violence and on the major risk factors for youth violence.

Strategies and programs are first classified as effective or ineffective. Effective strategies and programs are then further broken down into Model programs, which meet very high standards of demonstrated effectiveness, and Promising programs, which meet a minimum standard. Finally, within Model and Promising categories, a distinction is made between strategies and programs that have demonstrated effects on violence and serious delinquency (Level 1) and those that have demonstrated effectiveness on known risk factors (Level 2).

The decision to include serious delinquency along with violence as a criterion for Level 1 programs was based upon the major meta-analysis of program effectiveness (Lipsey & Wilson, 1998), which did not differentiate between those two outcomes. Serious delinquency was a major risk factor for violence in both the early and late onset of risk (see Chapter 4). Level 2 Model programs are those that address any of the other risk factors with large effect sizes (substance use, weak social ties, antisocial or delinquent peers, gang membership).[1] For Promising strategies, Level 1 again refers to programs with demonstrated effects on violence and serious delinquency. Level 2 programs are those with demonstrated effects on *any* risk factor with an effect size of .10 or greater.

No attempt was made to systematically search the literature for programs and strategies that affect small risk factors for youth violence, such as academic failure or anxiety and depressive disorders. Therefore, some effective programs or strategies that target small risk factors may not be included. However, such programs and strategies occasionally came to our attention; those that did were included if the risk factors they affected had an effect size of .10 or greater. Thus, risk factors such as child abuse and neglect, which have an effect size of less than .10, are not covered in this report.[2] Also excluded are clinical trials of psychotropic medications, which have proved effective in treating some affective disorders that are risk factors for youth violence but have not been shown in rigorous clinical studies to reduce youth violence specifically. A review of these interventions can be found in *Mental Health: A Report of the Surgeon General* (1999).

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[1] As indicated in Chapter 4, drug use has a large effect size as an early risk factor but a small effect size as a late risk factor. It is included here as an outcome criterion for level 2 Model programs because most of the existing drug prevention programs begin in the early period, or before adolescence.

Several major reviews of youth violence prevention and intervention programs have been published in the past decade. This chapter draws mainly upon the following:[3]

- *Preventing Crime: What Works, What Doesn't, What's Promising. A Report to the United States Congress* (Sherman et al., 1997)
- The Office of Juvenile Justice and Delinquency Prevention's *A Sourcebook: Serious, Violent, and Chronic Juvenile Offenders* (Howell et al., 1995)
- The Office of Juvenile Justice and Delinquency Prevention's *Guide for Implementing the Comprehensive Strategy for Serious, Violent, and Chronic Juvenile Offenders* (Howell, 1995)
- The Centers for Disease Control and Prevention's *Best Practices of Youth Violence Prevention: A Sourcebook for Community Action* (Thornton et al., 2000)
- The American Youth Policy Forum's *Less Hype, More Help: Reducing Juvenile Crime, What Works—And What Doesn't* (Mendel, 2000)
- The Center for the Study and Prevention of Violence's *Blueprints for Violence Prevention* (Elliott & Tolan, 1999)
- "School-Based Crime Prevention" (Gottfredson et al., in press)

To improve readability, the reviews listed above are cited here and in the section below on scientific standards for effectiveness, but they are not referred to repeatedly in the section on best practices. Citations not listed above will be included where appropriate.

Many reviews use either no explicit criteria or only minimal criteria for identifying the programs they recommend, making it difficult to draw clear conclusions about the effectiveness of individual violence prevention strategies. This report limits its identification of effective programs to those meeting a minimum standard of study design similar to the maximum standard described in Sherman et al. (1997) and Gottfredson et al. (in press). In those two reports, a scientific methods score of 4 or 5 indicates that an evaluation used an experimental or quasi-experimental design. This report applied that design standard to the extent possible, given the limitations described above.

This report also attempts to distinguish between absolute deterrent effects, in which an intervention is compared to no treatment, and marginal deterrent effects, in which the intervention or strategy is evaluated against another treatment. Marginal deterrent effects are effects of the intervention over and above the effects of another treatment strategy and thus may underestimate the true effects of the intervention, compared to receiving no treatment at all. In such cases, the nature of the comparison group is identified in the text.

Both meta-analyses and reviews can be used to identify successful strategies, approaches, or types of programs used to prevent youth violence. However, this general approach has a critical limitation: Within any given category of programs, there may be specific programs that are effective and others that are not; moreover, programs may be effective for some populations but not others (males but not females, for example). The general effect size is an estimate of the average effect and thus may not characterize any particular program or its use for a particular population. Often the effects of individual programs within each general strategy vary widely. For this reason, it is necessary to take one more step in the identification of best practices—focusing specifically on individual programs that work.

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[2] This limitation in the review of programs and strategies should not be interpreted as a judgment that such programs are unimportant. Programs that successfully address multiple risk factors, even those with very small individual effect sizes, may be very useful and should be supported and disseminated. Given limited funding, however, it seems prudent to invest in those programs that have greater potential effects on violence prevention.

[3] Reviews by the Hamilton Fish Institute (2000), Drug Strategies Research Institute (1998), and the Center for Substance Abuse Prevention's (2000) online list of model programs were also considered. For the most part, these sources used criteria for selecting the programs they recommend different from those used in this report, or their recommendations overlap those in the primary sources for violence prevention listed above.

Identifying specific programs that work requires a clear set of standards for judging effectiveness. This chapter describes the scientific community's consensus regarding standards and how this report applied those standards to the evaluation literature to place programs in one of three categories: Model (demonstrates a high level of effectiveness), Promising (meets minimal standards of effectiveness), or Does Not Work (consistent evidence of no effects or harmful effects).

Few existing violence prevention and intervention programs have met the qualifications of a Model program. Many more have met the standards for a Promising program, and even more would probably meet these standards if evaluated appropriately. The fact that a program is not identified in this report as Promising or Model does not mean it is ineffective; in most cases it means only that it has not been rigorously evaluated. Those evaluated and found to be ineffective are identified as ineffective. While hundreds of programs are employed throughout the United States to prevent youth violence and treat young offenders, only those with a credible scientific evaluation are highlighted in this report. This shortfall underscores the need for a renewed focus on evaluation in the field of youth violence prevention.

SCIENTIFIC STANDARDS FOR DETERMINING PROGRAM EFFECTIVENESS

The scientific community agrees on three standards for evaluating effectiveness: rigorous experimental design, evidence of significant deterrent effects, and replication of these effects at multiple sites or in clinical trials. For example, the level of evidence required to establish the effects of an agent or intervention in *Mental Health: A Report of the Surgeon General* (1999) was demonstration of the effects in randomized, controlled experimental studies that had been replicated. The U.S. Food and Drug Administration requires the same level of evidence before approving a new drug for use in humans. Unfortunately, this level of evidence has not been routinely required by agencies that recommend or fund youth violence prevention programs, though some organizations and most researchers are calling for establishment of meaningful criteria for program effectiveness (Elliott, 1998; Mendel, 2000, p. 74). Most researchers want evaluations to meet one or more of these three scientific standards for assessing effectiveness.

Rigorous experimental design includes, at a minimum, random assignment to treatment and control groups (Andrews, 1994; Center for Substance Abuse Prevention, 2000; Chamberlain & Mihalic, 1998; Howell et al., 1995; Lipsey, 1992a; Lonigan et al., 1998). A less stringent, but acceptable, study design is quasi-experimental, in which equivalent comparison and control groups are established but assignment of study participants to the groups is not random (Center for Substance Abuse Prevention, 2000; Howell et al., 1995; Lipsey, 1992b; Sherman et al., 1997; Tolan & Guerra, 1994).

Well-designed studies should also have low rates of participant attrition, adequate measurement, and appropriate analyses (Andrews, 1994; Center for Substance Abuse Prevention, 2000; Chamberlain & Mihalic, 1998). High attrition can undermine the equivalence of experimental and control groups. It can also signal problems in program implementation. Adequate measurement implies that the study measures, including the outcome measure, are reliable and valid indicators of the intended outcomes and that they are applied with quality, consistency, and appropriate timing (Tolan & Guerra, 1994).

In clinical trials, replication means conducting both efficacy and effectiveness trials (Lonigan et al., 1998). Efficacy trials test for benefits to participants in a controlled, experimental setting, and effectiveness trials test for benefits in a natural, applied setting. In practice, this distinction is often blurred, but the principle of independent replication at multiple sites is well established. Replication is an important element of program evaluation because it establishes that a program and its effects can be exported to new sites and implemented by new teams under different conditions. A program that is demonstrated to be effective at more than one site is likely to be effective at other sites as well.

Statistical significance is based on the level of confidence with which one can conclude that a difference between two or more groups (generally a treatment and a control group) results from the treatment delivered and not, for example, from the selection process or chance. A probability value of .05 is widely accepted as the threshold for statistical significance; a probability below this threshold ($p < .05$) indicates that a difference of this magnitude could happen by chance less than 5 percent of the time.

High-quality evaluations of youth violence prevention programs should be designed to demonstrate with this degree of confidence that a program is reducing the onset or prevalence of violent behavior or individual rates of offending (Andrews, 1994; Tolan & Guerra, 1994). Since serious delinquency is strongly related to violence, reductions in serious criminal behavior (or index crimes) are also considered to be acceptable outcome measures for identifying effective violence prevention programs (Andrews, 1994; Elliott, 1998; Lipsey, 1992a, 1992b). However, direct scientific evidence of a deterrent effect on violent behavior is certainly preferable.

Prevention programs are designed to prevent or reduce violent behaviors by acting on risk and protective factors. Reducing risk is a less stringent standard than reducing violence, but reducing risk undoubtedly holds some promise of preventing violence. Thus, significant changes in risk factors for violence are acceptable indications of program effectiveness (Gottfredson, 1997; Gottfredson et al., in press; Howell et al., 1995; Sherman et al., 1997). In addition, because most violence begins in adolescence, childhood interventions are concerned primarily with risk reduction.

A less widely accepted but nevertheless important standard for demonstrating effectiveness is long-term sustainability of effects (Elliott & Tolan, 1999). Although this criterion may not be required to establish effectiveness in other disciplines, it is very important in evaluating violence prevention programs because beneficial effects can diminish quickly after youths leave a treatment setting or program to return to their usual environment.

Effective programs produce long-term changes in individual competencies, environmental conditions, and patterns of behavior. Thus, successful programs get youths off a violent life course trajectory. The sustainability of effects is particularly difficult for early intervention programs, which can be implemented more than a decade before the peak age of onset for youth violence. Ideally, effects would be sustained though adolescence. On a practical level, programs in this report are considered to have demonstrated sustainability if the effects of the intervention continue for at least a year after treatment or participation in the designed intervention, with no evidence of a subsequent loss of effect (Elliott & Tolan, 1999).

Higher standards should be set for programs that are promoted and disseminated on a national level than for those being developed and implemented on a more restricted basis at the local level. Before a program is recommended and funded for national implementation, it is important to show clearly that it has a significant, sustained preventive or deterrent effect and that it can be expected to have positive results in a wide range of community settings (as long as it is implemented correctly and with the appropriate population). Programs that meet such high standards are designated Model programs. Those that do not quite meet these rigorous standards are recognized and encouraged as Promising, with the caution that they be carefully evaluated.

Identifying ineffective programs is another element of assessing best practices. It is as important to know which programs do not work—and should not be supported with limited prevention funds—as it is to know which do work. The same scientific standards are used in judging effectiveness and ineffectiveness. Because it is generally unlikely that a high-quality evaluation will be conducted on a program that shows little sign of effectiveness, only two specific programs have been designated Does Not Work in this report.

Some general strategies identified as ineffective in this report may not actually be flawed; rather, their lack of effectiveness may result from poor program implementation or a poor match between program and target population. Alternatively, some approaches may appear ineffective when used in isolation because their effects are quite small and difficult to detect. These approaches should not be used alone, but they may be useful as components of more comprehensive strategies that have positive preventive effects. In other cases, however, a program or approach may be ineffective because the basic strategy is flawed—that is, the method or approach used to change the targeted risk or protective factors does not have the intended effect.

The following is a summary of the scientific standards for establishing the effects of a violence prevention program.

Model

- Rigorous experimental design (experimental or quasi-experimental)
- Significant deterrent effects on:
  - Violence or serious delinquency (Level 1)
  - Any risk factor for violence with a large effect size (.30 or greater) (Level 2)
- Replication with demonstrated effects
- Sustainability of effects

Promising

- Rigorous experimental design (experimental or quasi-experimental)
- Significant deterrent effects on:
  - Violence or serious delinquency (Level 1)
  - Any risk factor for violence with an effect size of .10 or greater (Level 2)
- Either replication or sustainability of effects

Does Not Work

- Rigorous experimental design (experimental or quasi-experimental)
- Significant evidence of null or negative effects on violence or known risk factors for violence
- Replication, with the preponderance of evidence suggesting that the program is ineffective or harmful

Other standards have been proposed for youth violence prevention programs, particularly those intended for implementation on a national level. One of these is cost-effectiveness, a key consideration in program funding but not a scientific criterion for effectiveness. Unfortunately, there are no standardized cost criteria for violence prevention programs, so it is difficult to compare costs across programs (Elliott, 1998). Moreover, it is difficult to obtain reliable cost-benefit estimates for individual programs. Despite these obstacles, some researchers have conducted extensive reviews of the costs and benefits of violence and delinquency prevention and intervention programs (Greenwood, 1995; Greenwood et al., 1998; Karoly et al., 1998; Washington State Institute for Public Policy, 1999). Their findings will be discussed in the cost-effectiveness section of this chapter. This is an important and growing area of research.

Setting such stringent scientific standards automatically limits the number and types of programs that will be identified as effective in this report. The specific programs that can meet these standards will be determined in part by the nature of the program—the design must lend itself to scientific evaluation—and in part by whether funding has been made available for program evaluation. For instance, early childhood individual change programs are overrepresented in the list of effective programs. This fact is probably a result of the relatively large amount of funding allocated to the study of these programs and the relative ease with which experimental evaluations can be carried out. On the other hand, programs promoting change in the social structure, community-level programs, and programs that focus on environmental change more generally (in schools, neighborhoods, peer groups, and so on) are probably underrepresented in this report. Evaluation of such programs and strategies is more difficult and costly; therefore, fewer rigorous evaluations of these programs have been done.

Because of these limitations, the programs discussed in this report may not represent the overall balance of youth violence prevention programs currently being implemented in communities throughout the country. This shortcoming highlights the need for more research on program effectiveness and for the development of additional criteria and valid measures for assessing the effects of community- or school-based and environmental change programs. In addition, the imbalance should not be interpreted as an indication that such programs are less effective than programs that focus on individual change. Indeed, there is some evidence that school-based programs designed to change the social climate of the classroom or school are more effective than individual change programs (Gottfredson et al., in press).

STATEGIES AND PROGRAMS: MODEL, PROMISING, AND DOES NOT WORK

It is important to reiterate that the specific programs and general strategies discussed in this report have been identified from recent reviews of the literature on youth violence prevention. Although this information is growing rapidly, youth violence prevention remains a young field, and only limited evaluation data are available for many strategies and programs. Therefore, the absence of a particular strategy or program from this section does not in any way imply that it is ineffective; rather, the information available is not sufficient to justify any conclusions about its effectiveness.

Model and Promising programs meet the scientific criteria for effectiveness outlined above within the populations in which they have been tested (as indicated in the text). These programs are widely regarded by the youth violence prevention community as effective. Appendix 5–A shows the consistency with which they have been recommended by various independent groups of researchers as best practices in youth violence prevention. With only a few exceptions, each of the programs has already been identified as a best practice in two or more other reports on what works in youth violence prevention.

This section is divided into prevention and intervention efforts. True prevention, or primary prevention, is defined in this report as lessening the likelihood that youths in a treatment or intervention program will initiate violent behavior, compared to youths in a control group. In some cases, the prevention of risk factors for violent behavior is considered the outcome, and the reduced likelihood of youths' encountering this risk is the measure of effectiveness. Therefore, prevention programs are designed to target youths who have not yet become involved in violence or encountered specific risk factors for violence. Prevention efforts include general strategies and programs that target general (universal) populations of youths.

Intervention, on the other hand, is defined as reducing the risk of violence among youths who display one or more risk factors for violence (high-risk youths) or preventing further violence or the escalation of violence among youths who are already involved in violent behavior. These types of interventions are also known as secondary and tertiary prevention, respectively. Thus, intervention includes programs that target high-risk (selected) populations of youths or already violent (indicated) youths. Although there is some overlap between prevention and intervention efforts, programs that are most effective in general populations of young people are not always effective in reducing further violence among seriously delinquent youths.

The programs discussed below are listed in Appendix 5–B, along with more detailed information on each one. Specific results of the evaluations are found there; findings are described in general terms in this chapter. Box 5–1 summarizes effective and ineffective strategies, and Box 5–2 lists the programs discussed below by best practices category: Model, Promising, or Does Not Work.

Primary Prevention: General Populations of Young People

All of the programs and strategies discussed in this section are primary prevention approaches to reducing youth violence—that is, they are implemented on a universal scale and aim to prevent the onset of youth violence and related risk factors. Some are designed to change individual risk factors, others target environmental risk factors, and a few are designed to change both.

Box 5–1. Rating intervention strategies

Effective Strategies

Primary Prevention: Universal

Skills training
Behavior monitoring and reinforcement
Behavioral techniques for classroom management
Building school capacity
Continuous progress programs
Cooperative learning
Positive youth development programs

Secondary Prevention: Selected

Parent training
Home visitation
Compensatory education
Moral reasoning
Social problem solving
Thinking skills

Tertiary Prevention: Indicated

Social perspective taking, role taking
Multimodal interventions
Behavioral interventions
Skills training
Marital and family therapy by clinical staff
Wraparound services

Ineffective Strategies

Primary Prevention: Universal

Peer counseling, peer mediation, peer leaders
Nonpromotion to succeeding grades

Secondary Prevention: Selected

Gun buyback programs
Firearm training
Mandatory gun ownership
Redirecting youth behavior
Shifting peer group norms

Tertiary Prevention: Indicated

Boot camps
Residential programs
Milieu treatment
Behavioral token programs
Waivers to adult court
Social casework
Individual counseling

Skill- and Competency-Building Programs

Skills-oriented programs are among the most effective general strategies for reducing youth violence and risk factors for youth violence. In fact, two universal programs that take this approach have met the criteria for a Model program: Life Skills Training and the Midwestern Prevention Project.

Life Skills Training (LST) is designed to prevent or reduce gateway drug use. The program targets students in middle or junior high school, with initial implementation in grades 6 and 7 and booster sessions for the next 2 years. The curriculum has three major components: self-management skills, social skills, and information and skills related specifically to drug use. Teachers use a variety of techniques, including instruction, demonstration, feedback, reinforcement, and practice, to train students in these three core areas. Evaluations show that the program can cut tobacco, marijuana, and alcohol use. Moreover, long-term effects of participation in Life Skills Training include a lower risk of polydrug use, pack-a-day smoking, and inhalant, narcotic, and hallucinogen use.

The ***Midwestern Prevention Project*** targets middle school students (grades 6 or 7). Its goal is to reduce the risk of gateway drug use associated with the transition from early adolescence to middle through late adoles-

Box 5–2. Rating prevention programs

Model

Level 1 (Violence Prevention)

Seattle Social Development Project
Prenatal and Infancy Home Visitation by Nurses
Functional Family Therapy
Multisystemic Therapy
Multidimensional Treatment Foster Care

Level 2 (Risk Prevention)

Life Skills Training
The Midwestern Prevention Project

Promising

Level 1 (Violence Prevention)

School Transitional Environmental Program
Montreal Longitudinal Study/Preventive Treatment Program
Syracuse Family Development Research Program
Perry Preschool Program
Striving Together to Achieve Rewarding Tomorrows
Intensive Protective Supervision Project

Level 2 (Risk Prevention)

Promoting Alternative Thinking Strategies
I Can Problem Solve
Iowa Strengthening Families Program
Preparing for the Drug-Free Years
Linking the Interests of Families and Teachers
Bullying Prevention Program
Good Behavior Game
Parent Child Development Center Programs
Parent-Child Interaction Training
Yale Child Welfare Project
Families and Schools Together
The Incredible Years Series
Preventive Intervention
The Quantum Opportunities Program

Does Not Work

Drug Abuse Resistance Education
Scared Straight

cence by training youths to avoid drug use and situations in which drugs are likely to be used. The program has five major components that are implemented in stepwise fashion over the course of approximately 4 years: mass media program, school program, parent education and organization, community organization, and local health policy. The mass media program spans the duration of the project, while the other components are introduced at a rate of approximately one per year. The school-based component forms the core of the program. This project has demonstrated positive effects on a number of outcomes that are closely related to youth violence. For instance, it has been shown to reduce daily smoking and marijuana use and to lessen marijuana use, hard drug use, and smoking through age 23. In addition, the project has facilitated improvements in parent-child communication about drug use and in the development of prevention programs, activities, and services within communities.

Two school-based programs that focus on teaching important social skills to students, Promoting Alternative Thinking Strategies and I Can Problem Solve, meet the criteria for a Promising program. The ***Promoting Alternative Thinking Strategies (PATHS)*** curriculum is taught to elementary school students at entrance through grade 5. Lessons targeting emotional competence (expression, understanding, and regulation), self-control, social competence, positive peer relations, and interpersonal problem-solving skills are delivered three times a week in 20- to 30-minute sessions. Evaluations of PATHS show that this program has positive effects on several risk factors associated with violence, including aggressive behavior, anxiety and depression, conduct problems, and lack of self-control. The effectiveness of PATHS has been demonstrated for both regular-education and special-education students.

I Can Problem Solve has been used effectively with students in nursery school, kindergarten, and grades 5 and 6. The main goal of this program, which is implemented in 12 small-group sessions over 3 months, is to train children to use problem-solving skills to find solutions to interpersonal problems. In evaluations, I Can Problem Solve has improved classroom behavior and children's problem-solving skills for up to 4 years after the end of the intervention. Whereas this program is appropriate for all children, it has been most effective with children living in poor, urban areas.

Training Programs for Parents

Skills-training programs for young people can also be effective when combined with parent training. Two such programs that have been designated Promising are the Iowa Strengthening Families Program and Preparing for the Drug-Free Years. Both programs are different from LST, the Midwestern Prevention Project, PATHS, and I Can Problem Solve in that they are family-based rather than school-based.

The ***Iowa Strengthening Families Program,*** which targets 6th-graders and their families, is made up of seven weekly sessions of parent and child training designed to improve parenting skills and family communication. The program has been evaluated in rural, Midwestern schools with primarily white, middle-class students. ***Preparing for the Drug-Free Years*** is a family competency training program that promotes healthy, protective parent-child interactions and includes skills training for youths. Like the Iowa Strengthening Families Program, it has been implemented successfully with middle school students and their families in the rural Midwest. Preparing for the Drug-Free Years involves five sessions. One session on peer pressure includes both students and their parents, while the remaining sessions include only parents and focus on the following areas: risk factors and family protective factors for adolescent substance use, effective parenting skills, managing anger and family conflict, and facilitating positive child involvement in family activities. These programs have demonstrated positive effects on child-family relationships and avoidance of alcohol, tobacco, and marijuana use for up to 4 years after participation.

Linking the Interests of Families and Teachers (LIFT), another Promising program, also combines school-based skills training for children with parent training. The classroom component of the program targets 1st-grade and 5th-grade students and includes twenty 1-hour sessions delivered over 10 weeks. A peer component of the program focuses on encouraging positive social behavior during playground activities. The third component of LIFT is parent training, in which parent groups meet weekly for 6 weeks. The program focuses on reducing children's antisocial behaviors, involvement with delinquent peers, and drug and alcohol use. Children who participate in LIFT exhibit less physical aggression on the playground, better social skills, and, in the long term, less likelihood of associating with delinquent peers, using alcohol, or being arrested.

Behavior Management Programs

Strategies that take a behavioral approach to youth violence can also have positive, consistent effects on violence, delinquency, and related risk factors. The behavioral approaches shown to be effective in preventing youth violence on a universal scale are generally school-based and include behavior monitoring and reinforcement of attendance, academic progress and school behavior, and behavioral techniques for classroom management.

Much of the evidence on the effectiveness of **behavior monitoring and reinforcement** comes from studies conducted by Bry and colleagues (Bry, 1982; Bry & George, 1979, 1980). These studies provide evidence that interventions focusing on enhancing positive student behavior, attendance, and academic achievement through consistent rewards and monitoring can reduce substance use, self-reported criminal activity, and arrests, as well as enhance academic achievement in middle school students. In one study, for example, students exposed to this type of intervention were far less likely than students in a control group to have a delinquency record 5 years after the program.

Behavioral techniques for classroom management are a general strategy for changing the classroom environment. According to a review by O'Leary and O'Leary (1977), the best strategies for promoting positive classroom behavior are establishing clear rules and directions, use of praise and approval, behavior modeling, token reinforcement, self-specification of contingencies, self-reinforcement, and behavior shaping. Several strategies aimed at reducing negative student behaviors are also effective: ignoring misbehavior, reinforcing behavior that is incompatible with negative behavior, relaxation methods, and using disciplinary techniques such as soft reprimands, time-outs, and point loss and fines in token economies.

The ***Seattle Social Development Project*** is an excellent example of a program that includes classroom behavior management among its core components. The goal of this Model program is to enhance elementary school students' bonds with school and their families while decreasing a number of early risk factors for violence. Like other Model programs in this report, the initiative includes both individual and environmental change approaches and multiple components known to improve the effectiveness of violence prevention efforts. In addition to classroom behavior management, the components include child skills training and parent training, discussed later in this section.

Through these three components, which target prosocial behavior, interpersonal problem solving, academic success, and avoidance of drug use, the Seattle Social Development Project reduces the initiation of alcohol, marijuana, and tobacco use by grade 6 and improves attachment and commitment to school. At age 18, youths who participated in the full 5-year version of this program have lower rates of violence, heavy drinking, and sexual activity (including multiple sexual partners and pregnancy) and better academic performance than controls. The Seattle Social Development Project has been used effectively in both general populations of youths and high-risk children attending elementary and middle school.

Classroom behavior management is also a core component of three Promising programs: the Bullying Prevention Program, the Good Behavior Game, and the School Transitional Environmental Program. The ***Bullying Prevention Program*** targets students in elementary, middle, and junior high school. It begins with an anonymous student questionnaire designed to assess bullying problems in individual schools. Using this information, parents and teachers implement school-, classroom-, and individual-level interventions designed to address the bullying problems identified in the questionnaire, including individual work with students identified as bullies and victims. At the classroom level, teachers and students work together to establish and reinforce a set of rules about behavior and bullying, creating a positive, antibullying climate. This program has both individual change and environmental change objectives.

In elementary and junior high schools in Bergen, Norway, bullying problems were cut in half two years after the intervention. Antisocial behavior, including theft, vandalism, and truancy, also dropped during these years, and the social climate of the school improved. Replications have been conducted in England, Germany, and the United States, with similar effects.

Like the Bullying Prevention Program, the ***Good Behavior Game*** uses classroom behavior management as the primary means of reducing problem behaviors. The Good Behavior Game targets elementary school children and seeks to improve their psychological well-being and decrease early aggressive or shy behavior. While both of these programs can reduce antisocial behavior, their effects on violence and delinquency have not yet been measured.

This intervention has shown positive effects, as measured by teachers' reports of aggressive and shy behaviors in first-graders. Long-term evaluations show sustained decreases in aggression among boys rated most aggressive in first grade. Effects on violence and delinquency have not been measured.

The third Promising primary intervention program that makes use of classroom behavior management is the ***School Transitional Environmental Program,*** or STEP. STEP is based on the Transitional Life Events model, which postulates that stressful life events, such as transitions between schools, place children at risk of maladaptive behavior. The program's goals are to reduce the stress and disorganization often associated with changing schools by redefining the role of homeroom teachers. Behavior management is used to create an environment that promotes academic achievement and reduces school behavior problems and absenteeism. Participation in this program has been shown to reduce substance use and delinquency while improving academic achievement and school dropout rates. The STEP program has been most successful with students entering junior and senior high schools in urban, predominantly nonwhite communities. The program is also effective with students at high risk of behavioral problems.

Capacity-Building Programs

Several other school-level environmental approaches are effective in reducing youth violence and related outcomes. For instance, those that focus on building a school's capacity to plan, implement, and sustain positive changes can significantly reduce student delinquency and drug use. One program in which students were empowered to address school safety problems resulted in significant reductions in fighting and teacher victimization. Program Development Education is an example of this approach to reducing youth violence. It is a structured organizational development approach used to help organize, plan, initiate, and sustain school change. This approach has demonstrated positive effects on delinquency rates lasting at least 2 years into the program.

Teaching Strategies

Two other school-based primary prevention strategies are effective at reducing the risk of academic failure, a risk factor for youth violence: continuous progress programs and cooperative learning. **Continuous progress programs** are designed to allow students to proceed through a hierarchy of skills, advancing to the next level as each skill is mastered. This approach has shown consistent, positive effects on academic achievement in elementary school students in seven separate evaluations.

Cooperative learning is another innovative environmental change approach that can improve academic achievement in elementary school children. Quite different from continuous progress programs, cooperative learning programs place students of various skill levels together in small groups, allowing students to help each other learn. Studies by Slavin (1989, 1990) show that this approach has positive effects on attitudes toward school, race relations, attitudes toward mainstreamed special-education students, and academic achievement.

Community-Based Programs

Community-based strategies can also affect youth violence at the universal level. One such strategy is **positive youth development programs.** While the evidence is not yet strong enough to classify the Boys and Girls Clubs and the Big Brothers Big Sisters of America programs as Model or Promising, it is strong enough to conclude that the general strategy of these and similar programs is effective at reducing youth violence and violence-related outcomes. For instance, evaluations of Boys and Girls Clubs have shown reductions in vandalism, drug trafficking, and youth crime. An evaluation of a Canadian after-school program demonstrated large reductions in arrests. Although this general strategy is included with the primary prevention efforts, it can also be considered a secondary prevention strategy, since the specific youth development programs listed above are usually implemented in high-risk neighborhoods.

Ineffective Primary Prevention Programs

School-Based Programs

Some educational approaches that target universal populations have shown a consistent lack of effect in scientific studies. Peer-led programs, including **peer counseling, peer mediation, and peer leaders,** are among them. In a 1987 review of these interventions, Gottfredson concluded that there is no evidence of a positive effect and that these strategies can actually harm high school students. Results of a meta-analysis confirmed this finding, adding that adult-led programs are as effective as, or more effective than, peer-led programs in reducing youth violence and related risk factors. **Nonpromotion to succeeding grades** is another educational approach that can have harmful effects. Studies of this approach demonstrate negative effects on student achievement, attendance, behavior, and attitudes toward school.

One school-based universal prevention program meets the criteria for Does Not Work: ***Drug Abuse Resistance Education***, or ***DARE.*** DARE is the most widely implemented youth drug prevention program in the United States. It receives substantial support from parents, teachers, police, and government funding agencies, and its popularity persists despite numerous well-designed evaluations and meta-analyses that consistently show little or no deterrent effects on substance use. Overall, evidence on the effects of the traditional DARE curriculum, which is implemented in grades 5 and 6, shows that children who participate are as likely to use drugs as those who do not participate. However, some positive effects have been demonstrated regarding attitudes toward police.

Researchers have suggested several reasons for DARE's lack of effectiveness. The program is most commonly criticized for its limited use of social skills training and for being developmentally inappropriate. Specifically, DARE is implemented too early in child development: It is hard to teach children who have not gone through puberty how to deal with the peer pressure to use drugs that they will encounter in middle school.

Changes are being made at the national level in an attempt to improve the program's effectiveness. DARE developers have added social skills training sessions to the core curriculum and have developed a modified version of the curriculum that can be used in older student populations. These versions of DARE have not yet been evaluated.[4]

Secondary Prevention: Children at High Risk of Violence

Secondary prevention programs and strategies are implemented on a selected scale, for children at enhanced risk of youth violence, and are aimed at preventing the onset and reducing the risk of violence. Programs that target the families of high-risk children are among the most effective in preventing violence. Several family-based strategies and programs are included in the discussion below.

Parent Training

One effective approach involves training parents to use specific child management skills. A review by Dumas (1989) shows that parent training can lead to clear improvements in children's antisocial behavior (including aggression) and family management practices. In individual studies with disruptive/aggressive/hyperactive boys and girls, parent training has resulted in reduced aggressive, antisocial, and delinquent behaviors; lower arrest rates (including arrests for assault); less overall delinquency; and academic improvement. The following five Promising youth violence prevention programs include parent-training components.

The ***Montreal Longitudinal Study,*** sometimes called the ***Preventive Treatment Program,*** is a 2-year intervention aimed at preventing delinquency among 7- to 9-year-old boys from low-income families who have been identified as disruptive. The program has two major components: school-based social skills training (19 sessions) and parent training (17 sessions). The parent-training sessions, provided every 2 weeks for the duration of the intervention, teach parents to read with their children, monitor and reinforce their children's behavior, use effective discipline, and manage family crises. A long-term follow-up of Canadian boys enrolled in this program found positive effects on academic achievement and avoidance of gang involvement, drug and alcohol use, and delinquency up to age 15.

The ***Syracuse Family Development Research Program*** targets parents and children in impoverished families. It provides weekly home visitation with parent training by paraprofessional child development trainers and 5-year individualized day care that includes child training on social and cognitive skills and child behavior management. The ***Perry Preschool Program*** provides early education to children age 3 and 4 from families with low socioeconomic status. The preschool lasts 2 years and is designed to offer high-quality early childhood education and promote young children's intellectual, social, and physical development. In addition, this intervention provides weekly home visits by teachers and referrals for social services, when needed. Both of these programs have demonstrated long-term effects (up to age 19) on delinquency, academic achievement, and other school-related outcomes. In addition, the Perry Preschool Program has produced significant reductions in antisocial behavior, serious fights, police contacts, and school dropout rates.

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[4] For more information about DARE, see the following references: Aniskiewicz & Wysong, 1990; Center for the Study and Prevention of Violence, 1998; Dejong, 1987; Dukes et al., 1996; Ennett et al., 1994; Falco, 1994; Hansen & McNeal, 1997; Kochis, 1993; Mendel, 2000; Nyre, 1984; Nyre, 1985; Palumbo & Ferguson, 1995; Ringwalt et al., 1994; Rocky Mountain Behavioral Science Institute, 1995; Rosenbaum et al., 1994; Rosenbaum & Hanson, 1998; Sherman et al., 1997; Zagumny & Thompson, 1997.

Parent training is one of a broad range of family services offered through ***Parent Child Development Center Programs,*** which target low-income families with children age 2 months to 3 years. The parent-training component of this intervention targets mothers as the primary caregivers and focuses on infant and child development, home management, and family communication and interaction skills. The programs have positive effects on a variety of risk factors for youth violence, including child antisocial behavior and fighting and mother-child relationships.

The ***Parent-Child Interaction Training*** program targets low-income parents with preschool children who have at least one behavioral or emotional problem. Parents enrolled in the program participate in a series of four to five small-group sessions in which they learn a variety of parenting skills such as management of child behavior. This intervention has been shown to improve family management practices and reduce children's antisocial behaviors, including aggression and anxiety.

Home Visitation

Another effective family-based approach to preventing youth violence is home visitation, in which a nurse or other professional goes to the child's home and provides training, counseling, support, monitoring, or all of these services to first-time, low-income, or otherwise at-risk mothers. This strategy is particularly effective when implemented before children develop behaviors that put them at risk of violence.

Home visitation, with or without early childhood education programs, has shown significant long-term effects on violence, delinquency, and related risk factors in a number of studies. The degree of effect is dependent on several factors, including length (only long-term programs have demonstrated consistent effects), delivery (nurses appear to be the most effective home visitors, although some positive effects have been demonstrated with other types of visitors), and timing (the earlier these programs begin, the better).

Prenatal and Infancy Home Visitation by Nurses is the only home visitation program that meets the criteria for a Model youth violence prevention program. It also incorporates all of the characteristics associated with the most effective home visitation programs: It is delivered by nurses, it begins early (before the child's birth), and it is long-term, lasting from before birth to age 2. Home visits are scheduled at intervals from 1 week to 1 month throughout the 2-year intervention. The program targets low-income, at-risk pregnant women bearing their first child. The goals are (1) to improve pregnancy outcomes and child care, health, and development, (2) to build a social support network around the family, and (3) to enhance mothers' personal development, including educational achievement, participation in the workforce, and personal competency skills and self-efficacy.

Prenatal and Infancy Home Visitation by Nurses has a number of long-term, positive effects on youth violence and related outcomes, including fewer arrests and less alcohol use by youths at age 15 and lower rates of child abuse and neglect, compared to controls. While child abuse and neglect are not usually considered a violence outcome in this report, they are included here because the intervention is designed for mothers who are still youths themselves.

Multicontextual Programs

Several Promising secondary youth violence prevention programs address multiple contexts that affect a child's risk of future violence: home, school, and community. The ***Yale Child Welfare Project*** is a Promising program that uses in-home visitation and day care to deliver parent training and other family and child services. This intervention targets healthy, first-born infants of mothers with incomes below the poverty level who live in inner cities. The 30-month program includes weekly home visits (usually by a social worker), pediatric medical care, psychological services, and early education (day care) for children. Ten-year follow-up of families involved in the Yale Child Welfare Project shows that the program has positive effects on parent involvement in their children's education, academic achievement (less need for remedial and supportive services), and antisocial behavior.

Striving Together to Achieve Rewarding Tomorrows, CASASTART, formerly known as the

Children At Risk (CAR) program, targets at-risk youths age 11 to 13 who live in severely distressed neighborhoods. The intervention has eight core components, each targeting a different context that affects the risk of violence: community-enhanced policing/enhanced enforcement, case management for youth and families, criminal/juvenile justice intervention, family services, after-school and summer activities, educational services, mentoring, and incentives for participation. Evaluations of CASASTART demonstrate that it has positive effects on avoidance of gateway drug use, violent crime, and drug sales and that these effects are sustained up to 1 year after participation.

The most comprehensive of these Promising multicontextual interventions is ***Families and Schools Together,*** or the ***FAST Track*** project. This intervention combines several of the strategies identified in this chapter as effective: social skills training, parent training, home visitation, academic tutoring, and classroom behavior management techniques. The program targets children identified as disruptive in kindergarten and aims to prevent severe, chronic conduct problems by increasing communication and strengthening bonds between the school, home, and child, thereby enhancing social, cognitive, and problem-solving skills and improving peer relationships. FAST Track has positive effects on several risk factors associated with youth violence, including academic achievement and parent-child relationships. Although initial evaluations did not show any effects of this program on children's antisocial behaviors, the long-term follow-up studies now in progress should be able to determine whether FAST Track has a significant effect on this violence-related outcome.

Another comprehensive Promising intervention, **The Incredible Years Series**, is a series of curricula for parents, teachers, and children aimed at promoting social competence and preventing, reducing, and treating conduct problems in at-risk children age 3 to 8. In each of these three curricula, trained facilitators use videotapes to encourage problem solving and discussion. The parent-training component focuses mainly on parent competence and school involvement; the teacher-training component targets classroom behavior management; and the child-training component includes sessions on social skills, empathy, anger management, and conflict resolution. Evaluations of this intervention demonstrate positive effects on child conduct at home and cognitive problem solving with peers.

Academic Programs

Several educational approaches are effective at improving academic achievement a weak but nevertheless important risk factor for late-onset youth violence (see Chapter 4). An effective secondary prevention strategy for improving academic performance is **compensatory education,** which targets students at risk of academic failure. Compensatory education strategies (such as cross-age or adult tutoring) that involve pulling students out of their regular classes to receive extra assistance in reading and math can improve long-term academic performance for all students, regardless of their achievement level. Moreover, when older students tutor younger students, both groups show academic gains. A meta-analysis of peer and cross-age tutoring of elementary and middle school students showed substantial effect sizes for academic achievement in both tutors and those tutored (Cohen et al., 1982). In more recent years, the compensatory education approach has been expanded to include schoolwide interventions.

Preventive Intervention is a 2-year, school-based behavioral reinforcement program that begins in grade 7 and targets students with low academic motivation, family problems, or disciplinary problems. The intervention includes behavior monitoring and reinforcement in the classroom as well as enhanced communication (through regular classroom meetings and reports to parents) between teachers, students, and parents regarding behavior and attendance at school.

Educational assistance is one of three major components of the ***Quantum Opportunities Program,*** a community-based intervention that targets adolescents from families receiving public assistance. Students who participate in this program are assigned to a peer group and a caring adult and receive up to 250 hours of educational services to enhance academic skills; activities targeting personal development, life skills, career planning, and other areas; and service opportunities in the community. The intervention begins at grade 9 and continues through high school.

Both of these programs have demonstrated positive effects on several aspects of academic achievement, and Preventive Intervention has been shown to reduce drug use and the risk of having a county court record 5 years after participation.

Moral-Reasoning, Problem-Solving, Thinking Skills

As seen in some of the programs above, interventions that aim to improve youths' moral-reasoning, problem-solving, and thinking skills are also effective approaches to reducing youth violence in high-risk populations. For instance, one **moral-reasoning**-based intervention implemented in "behavior-disordered" high school students has demonstrated lasting positive effects by reducing police contacts and official school disciplinary actions (Arbuthnot & Gordon, 1986). Evidence of the effectiveness of **social problem-solving** interventions includes a study of children and young adolescents referred for treatment of antisocial behavior; these youths showed significantly lower aggression scores after treatment and lower rates of externalizing behavior 1 year later (Kazdin et al., 1989).

The evidence supporting **thinking skills** approaches is similar, with particularly impressive results from two interventions: Lochman's Anger-Coping Intervention and Rotheram's social skills training intervention. Lochman (Lochman, 1992; Lochman et al., 1984) reports large reductions in disruptive-aggressive behavior immediately after the program and reductions in substance use 3 years later in high-risk, aggressive boys in grades 4 through 6. Rotheram's studies (1982) demonstrate improvements in academic achievement and in aggressive problem-solving responses—both risk factors for violent behavior. Researchers speculate that one reason for the effectiveness of social skills interventions is that they are often more comprehensive in scope than other types of cognitive-behavioral approaches to preventing youth violence and related outcomes.

Ineffective Secondary Prevention Approaches

Whereas the research presented above demonstrates that a large number of approaches and programs can have significant, positive effects on youth violence and violence-related risk factors, several popular prevention approaches used in high-risk populations have been shown to be ineffective. These include gun buyback programs, firearm training, and mandatory gun ownership.

Gun buyback programs, a particularly expensive strategy, have consistently been shown to have no effect on gun violence, including firearm-related homicide and injury. This finding may appear counterintuitive, given the fact that these programs do, in fact, take guns off the street. However, there is some evidence that most of the guns turned in are not functional and that most persons turning in guns have other guns at home. Two less popular strategies, **firearm training** and **mandatory gun ownership,** have also demonstrated no significant effects on firearm-related crimes. These approaches were expected to deter gun violence by increasing the number of private citizens who were trained to use guns properly and who owned firearms for protection.

Two community-based strategies for preventing youth violence, **redirecting youth behavior** and **shifting peer group norms,** have also shown a lack of effect in reducing youth violence. In fact, because both approaches tend to group high-risk youths together, they can actually increase the cohesiveness of delinquent peer groups and facilitate deviancy training (Dishion et al., 1994, 1995; Elliott & Menard, 1996; Patterson & Yoerger, 1997). Programs that aim to redirect high-risk youth toward conventional activities involve recreational, enrichment, and leisure activities, including the popular Midnight Basketball program. In general, programs that focus on shifting peer group norms have attempted to turn youth gangs into benign clubs. Instead, these programs have had no effect or have actually increased gang-related delinquent behavior.

Tertiary Prevention: Violent or Seriously Delinquent Youths

Each of the programs and strategies highlighted in this section is implemented on an indicated scale, that is, for young people who have already demonstrated violent or seriously delinquent behavior. The best information on general strategies that are effective or ineffective in reducing the risk of further violence among these youths comes from meta-analyses. The most rigorous and most frequently cited meta-analyses of violence prevention programs are those conducted by Lipsey and colleagues and by Andrews and colleagues (Lipsey, 1992a, 1992b; Lipsey & Wilson, 1998; Andrews, 1994; Andrews et al., 1990). This section draws largely on these analyses, which include interventions targeting youths involved in any delinquent behavior and those involved in serious delinquent behavior. To enhance readability, the meta-analyses are cited here rather than throughout the text. Effect sizes are a standardized mean difference, corrected for small sample size and method effects. This measure reflects the average difference (expressed in standard deviation units) between the program group and comparison groups in regard to violence, substance abuse, and risk factors.

Two major conclusions come from Lipsey's research. The first is that effective treatment can divert a significant proportion of delinquent and violent youths from future violence and crime. This finding contradicts the conclusions of scientists two decades ago who declared that nothing had been shown to prevent youth violence. The second major conclusion is that there is enormous variability in the effectiveness of different types of programs for seriously delinquent youth. The most effective programs, on average, reduce the rate of subsequent offending by nearly half (46 percent), compared to controls, whereas the least effective programs actually increase the rate of subsequent offending by 18 percent, compared to controls. So, while some kinds of interventions substantially reduce youth violence and delinquency, others appear to be harmful (iatrogenic), actually increasing involvement in these behaviors.

Behavioral and Skill Development Interventions

Studies of male serious offenders demonstrate that treatment which includes a **social perspective-taking/role-taking** component can improve role-taking skills and reduce serious delinquent behavior for at least 18 months after treatment (Chandler, 1993). This finding is consistent with results from the Lipsey (Table 5–1) and Andrews studies, which indicate that **multimodal, behavioral, and skills-oriented interventions** are more effective than counseling and other less-structured approaches (see also Gendreau & Ross, 1987). In fact, in most youth populations—universal, selected, or indicated—behavioral and skills-oriented strategies are among the most effective violence prevention approaches.

Family Clinical Interventions

Although Lipsey reports only a small average effect size for reducing recidivism with family therapy (Table 5–1), the review literature indicates that specific strategies can be quite effective at preventing violence in delinquent youths and preventing further violence in already violent youths. One such approach is **marital and family therapy by clinical staff.** While marital and family therapy can include several different strategies, a common thread is the focus on changing maladaptive or dysfunctional patterns of family interaction and communication, including negative parenting behaviors—all risk factors for youth violence. Marital and family therapy shows consistent, positive effects on family functioning, child behavior, family interactions, and delinquency (Tremblay & Craig, 1995). Long-term studies have demonstrated positive effects of family therapy by clinical staff lasting up to 9 years.

Three Model tertiary youth violence prevention programs that use the family therapy approach are Functional Family Therapy, Multisystemic Therapy, and Multidimensional Treatment Foster Care. They are described below.

Functional Family Therapy (FFT) is actually a secondary and tertiary prevention program, since it targets youths 11 to 18 years old at risk of or already demonstrating delinquency, violence, substance use, conduct disorder, oppositional defiant disorder, or disruptive behavior disorder. FFT is a multistep, phasic intervention that includes 8 to 30 hours of direct services for youths and their families, depending upon individual needs. The phases of the interven-

Table 5–1. Average effect sizes

Serious Juvenile Offenders*		
Program Category	Effect Size (*d*)[†]	Percentage Point Reduction in Recidivism[††]
Institutionalized		
Consistent Evidence of Positive Effects		
■ Interpersonal skills	0.39	19%
■ Teaching family home	0.34	17%
Less Consistent Evidence of Positive Effects		
■ Behavioral programs	0.33	16%
■ Community residential	0.28	14%
■ Multiple services	0.20	10%
Mixed Effects		
■ Individual counseling	0.15	7%
■ Guided group	0.09	5%
■ Group counseling	0.05	3%
Inconsistent Evidence of Weak or No Effects		
■ Employment-related	0.15	7%
■ Drug abstinence	0.08	4%
■ Wilderness/challenge	0.07	4%
Consistent Evidence of Weak or No Effects		
■ Milieu therapy	0.08	4%
Noninstitutionalized		
Consistent Evidence of Positive Effects		
■ Individual counseling	0.46	22%
■ Interpersonal skills	0.44	21%
■ Behavioral programs	0.42	20%
Less Consistent Evidence of Positive Effects		
■ Multiple services	0.29	14%
■ Restitution	0.15	7%
Mixed Effects		
■ Employment-related	0.22	11%
■ Academic programs	0.20	10%
■ Advocacy/casework	0.19	9%
■ Family counseling	0.19	9%
■ Group counseling	0.10	5%
Inconsistent Evidence of Weak or No Effects		
■ Reduced caseload	-0.04	-2%
Consistent Evidence of Weak or No Effects		
■ Wilderness/challenge	0.12	6%
■ Early release	0.03	2%
■ Deterrence programs	-0.06	-3%
■ Vocational programs	-0.18	-9%

Juvenile Delinquents**		
Program Category	Effect Size (*d*)[†]	Percentage Point Reduction in Recidivism[††]
Juvenile Justice		
Employment	0.37	18%
Multimodal	0.25	12%
Behavioral	0.25	12%
Institutional, other	0.20	10%
Skill-oriented	0.20	10%
Community residential	0.16	8%
Any other juvenile justice	0.14	7%
Probation/parole, release	0.11	5%
Probation/parole, reduce caseload	0.08	4%
Probation/parole, restitution	0.08	4%
Individual counseling	0.08	4%
Group counseling	0.07	3%
Probation/parole, other enhancement	0.07	3%
Family counseling	0.02	1%
Vocational	-0.18	-9%
Deterrence	-0.24	-12%
Non–Juvenile Justice		
Skill-oriented	0.32	16%
Multimodal/broker	0.21	10%
Behavioral	0.20	10%
Group counseling	0.18	9%
Casework	0.16	8%
Family counseling	0.10	5%
Advocacy	0.10	5%
Other counseling	0.06	3%
School class/tutor	0.00	0%
Individual counseling	-0.01	0%
Any other non–juvenile justice	-0.01	0%
Employment/vocational	-0.02	-1%

* *Source:* Lipsey & Wilson, 1998

** *Source:* Lipsey, 1992

[†] The effect is a standardized mean difference score (Lipsey & Wilson, 1998, p. 318).

[††] This calculation assumes a 50% recidivism rate in the absence of intervention.

tion include engagement (to reduce the risk of early dropout), motivation (to change maladaptive beliefs and behaviors), assessment (to clarify interpersonal behavior and relationships), behavior change (including skills training for youths and parents), and generalization (in which individualized casework is used to ensure that new skills are applied to functional family needs).

These services are delivered in multiple settings by a wide range of interventionists, including supervised paraprofessionals, trained probation officers, mental health technicians, and mental health professionals with appropriate advanced degrees. The benefits of FFT include the effective treatment of conduct disorder, oppositional defiant disorder, disruptive behavior disorder, and alcohol and other drug abuse disorders; reductions in the need for more restrictive, costly services and other social services; reductions in the incidence of the original problem being addressed; and reductions in the proportion of youths who eventually enter the adult criminal justice system. In two trials, recidivism was found to be lower among participants than controls. Evidence of a diffusion effect was also found, with fewer siblings of participants acquiring a court record in the 2 to 3 years following treatment.

Multisystemic Therapy (MST) is an intensive family- and community-based treatment that addresses multiple determinants of antisocial behavior. This approach is implemented within a network of interconnected systems that includes one or more of th

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following contexts: individual, family, peer, school, and neighborhood. MST targets families with children in the juvenile justice system who are violent, substance-abusing, or chronic offenders and at high risk of out-of-home placement. Four types of services are delivered through a home-based model: strategic family therapy, structural family therapy, behavioral parent training, and cognitive-behavioral therapy. While the intensity of services ultimately depends on individual youth and family needs, the average MST family receives 60 hours of direct services delivered over a period of 4 months. Program outcomes in serious delinquents include reductions in long-term rates of rearrest, reductions in out-of-home placements, improvements in family functioning, and reductions in mental health problems among treated youths, compared to controls.

Multidimensional Treatment Foster Care is a multisystemic (multicontextual) clinical intervention that targets teenagers with histories of chronic and severe criminal behavior as an alternative to incarceration, group or residential treatment, or hospitalization. Meta-analyses conducted by Lipsey and others demonstrate that community-based treatment is more successful than residential treatment for this population of youths. Multidimensional Treatment Foster Care implementers recruit, train, and supervise foster families to offer youths treatment and intensive supervision at home, in school, and in the community. The program also provides parent training and other services to the biological families of treated youths, helping to improve family relationships and reduce delinquency when youths return to their homes. Youths who participate in this program also receive behavior management and skill-focused therapy and a community liaison who coordinates contacts among case managers and others involved with the youths. Evaluations indicate that Multidimensional Treatment Foster Care can reduce the number of days of incarceration, overall arrest rates, drug use, and program dropout rates in treated youths versus controls during the first 12 months after completing treatment; it can also speed the placement of youths in less restrictive, community settings.

Justice System Services

Justice system approaches to preventing youth violence can be effective when they focus on providing services rather than instituting greater penalties. One promising justice system approach is **wraparound services**, in which comprehensive services are tailored to individual youths, as opposed to trying to fit youths into predetermined or inflexible programs. Evaluations of Wraparound Milwaukee have shown reductions in recidivism and arrests during the year following participation.

One juvenile justice system approach to preventing youth violence meets the standards described above for a Promising program: ***Intensive Protective Supervision Project.*** This intervention removes delinquent youths (status offenders) under the age of 16 from criminal justice institutions and provides them with proactive and extensive community supervision. This program has been shown to have greater deterrent effects on referrals to juvenile court than standard protective supervision does.

Ineffective Tertiary Programs and Strategies

Several popular juvenile justice approaches to preventing further criminal behavior in delinquent youths have been shown to be consistently ineffective: specifically, boot camps, residential programs, milieu treatment, behavioral token programs, and waivers to adult court.

Boot Camps

Perhaps the most well known of these approaches, **boot camps** for delinquent youths are modeled after military basic training, with a primary focus on discipline. Compared to traditional forms of incarceration, boot camps produced no significant effects on recidivism in three out of four evaluations and trends toward increased recidivism in two. The fourth evaluation showed significant harmful effects on youths, with a significant increase in recidivism.

Boot camps typically focus very narrowly on physical discipline, a highly specific personal skill, rather than a broader range of skills and competencies, such as those addressed by effective programs. Boot camps are also a setting in which youths are exposed to other delinquent youths, who can act as models and positively reinforce delinquent behavior (Dishion et al., 1994).

Residential Programs

Residential programs, interventions that take place in psychiatric or correctional institutions, also show little promise of reducing subsequent crime and violence in delinquent youths. While some residential programs appear to have positive effects on youths as long as they remain in the institutional setting, research demonstrates consistently that these effects diminish once young people leave. Evaluations of two residential programs showed that participating youths were actually more likely to be rearrested and to report they had committed serious offenses during follow-up. In both studies, the comparison group consisted of youths assigned to regular training schools.

Two general approaches that are popular in residential settings are milieu treatment and behavioral token programs. Both strategies aim to change the organizational structures of residential programs. The **milieu treatment** approach is characterized by resident involvement in decision making and day-to-day interaction for psychotherapeutic discussion. While this approach shows some positive effects when individual responsibility is stressed, the more common strategy of group decision making has shown no positive effect on recidivism after release. Moreover, Lipsey and Wilson's meta-analysis shows that milieu therapy is one of the least effective approaches to preventing recidivism in serious juvenile offenders (Table 5–1).

In **behavioral token** programs, youths are rewarded for conforming to rules, exhibiting prosocial behavior, and not exhibiting antisocial or violent behavior. Like some other residential approaches, behavioral token programs can have positive effects on targeted behaviors while youths are institutionalized. However, when this strategy is used alone, any such effects disappear when youths leave the program.

Waivers to Adult Court

Another popular justice system approach to deterring youth violence, **waivers to adult court,** can have particularly harmful effects on delinquent youths. The idea behind this approach, "adult time for adult crime," was widely accepted into practice in the 1990s, when youth violence escalated dramatically. Evaluations of these programs suggest that they increase future criminal behavior rather than deter it, as advocates of this approach had hoped. Moreover, placing youths in adult criminal institutions exposes them to harm. Results from a series of reports indicate that young people placed in adult correctional institutions, compared to those placed in institutions designed for youths, are eight times as likely to commit suicide, five times as likely to be sexually assaulted, twice as likely to be beaten by staff, and 50 percent as likely to be attacked with a weapon (Bishop, 2000; Bishop & Frazier, 2000; Fagan et al., 1989; Flaherty, 1980).

Counseling

Several counseling, therapy, and social work approaches to treating delinquent youths have also been shown to be ineffective in the review literature, a finding that is consistent with the results of Lipsey's meta-analyses (Table 5–1). One "mainstay" (Tolan & Guerra, 1994, p. 15) of the juvenile justice system's toolkit against youth violence, **social casework,** combines individual psychotherapy or counseling with close supervision of youths and coordination of social services. Even when implemented carefully and comprehensively, programs that use this approach have failed to demonstrate any positive effects on recidivism. In fact, one long-term follow-up of delinquent youths treated in this setting shows several significant negative effects, including increases in alcoholism, unemployment, marital difficulties, and premature death (McCord, 1978).

Meta-analyses also demonstrate that **individual counseling** can be one of the least effective prevention approaches for delinquent youths. However, the effects of this strategy appear to depend largely on the population. Though relatively ineffective for general delinquency and only marginally effective for institutionalized seriously delinquent youths, individual counseling emerged as one of the most effective intervention approaches for noninstitutionalized seriously delinquent youths in Lipsey's studies (Table 5–1). The reason for this difference is unclear, but it illustrates the importance of program characteristics other than content, particularly the importance of matching the program to the appropriate target population. A meta-analysis by Andrews and colleagues (1990) confirms this finding, demonstrating that appropriate treatment can deter reoffending, whereas interventions that are poorly matched to the populations served can have no effect or a negative effect.

Shock Programs

One tertiary youth violence prevention intervention meets the scientific criteria established above for Does Not Work: ***Scared Straight.*** Scared Straight is an example of a shock probation or parole program in which brief encounters with inmates describing the brutality of prison life or short-term incarceration in prisons or jails is expected to shock, or deter, youths from committing crimes. Numerous studies of Scared Straight have demonstrated that the program does not deter future criminal activities. In some studies, rearrest rates were similar between controls and youths who participated in Scared Straight. In others, youths exposed to Scared Straight actually had higher rates of rearrest than youths not involved in this intervention. Studies of other shock probation programs have shown similar effects. (For more information on Scared Straight and similar shock probation interventions, see Boudouris & Turnbull, 1985; Buckner & Chesney-Lind, 1983; Finckenauer, 1982; Lewis, 1983; Sherman et al., 1997; Vito, 1984; Vito & Allen, 1981.)

COST-EFFECTIVENESS

Violence costs the United States an estimated $425 billion in direct and indirect costs each year (Illinois Center for Violence Prevention, 1998). Of these costs, approximately $90 billion is spent on the criminal justice system, $65 billion on security, $5 billion on the treatment of victims, and $170 billion on lost productivity and quality of life. The annual costs to victims are approximately $178 billion (Illinois Center for Violence Prevention, 1998). The most logical way to reduce these costs is to prevent violence altogether. Preventing a single violent crime not only averts the costs of incarceration, it also prevents the short- and long-term costs to victims, including material losses and the costs associated with physical and psychological trauma.

Despite these facts, policy in the United States continues to focus on get-tough laws and incarceration for serious violent criminals, as opposed to prevention and intervention (Greenwood, 1995). Federal spending on school-based crime, violence, and drug prevention programs is quite modest, compared to spending on crime and drug control strategies such as policing and prison construction (Gottfredson et al., in press). Not only are preventive approaches more beneficial than get-tough laws, some prevention and intervention strategies cost less over the long run than mandatory sentences and other get-tough approaches.

In an effort to determine the cost-effectiveness of California's three-strikes-and-you're-out law, which mandates life sentences for repeat offenders, Greenwood (1995) compared that approach to the benefits and cost-effectiveness of a number of crime prevention strategies. He estimated that each serious crime—homicide, rape, robbery, assault, or residential burglary—prevented by the three-strikes law cost the criminal justice system in California an additional $16,000 over the amount spent prior to this legislation. Using this price as the standard for cost-effectiveness, Greenwood calculated the costs per serious crime prevented of four prevention and intervention strategies: (1) early childhood intervention (perinatal home visitation continuing through the first 2 years, combined with 4 years of enriched day care programs) for high-risk families, (2) parent training for families with children who have shown aggressive behavior ("acted out") in school, (3) improved public school programs that target all youth, and (4) early interventions for very young delinquents. The costs calculated for each of these interventions included only direct program costs, not such indirect benefits as the money saved by averting incarceration or preventing victim trauma and its medical and social consequences.

Table 5–2 shows the benefits of the various prevention and intervention programs with respect to the number of serious crimes each can be expected to pre-

Table 5–2. Cost-effectiveness of early intervention in California[1]

Years	Estimated Serious Crimes Prevented (No.)[1]				Cost per Serious Crime Prevented ($)			
	Early Childhood[2]	Parent Training	School-Based	Early Delinquency	Early Childhood	Parent Training	School-Based	Early Delinquency
1	15,000	0	11,740	1,468	48,000		81,772	51,107
5	75,000	0	23,480	7,338	48,000	NA	40,886	10,221
10	75,000	35,220	46,960	14,675	48,000	784	20,443	5,111
20	148,375	63,396	58,700	26,415	24,263	435	16,354	2,839
30	221,750	70,440	58,700	29,350	16,234	392	16,354	2,555

Source: Greenwood, 1995.

[1] All estimates are based on 1992 crime figures and 1990 population figures.

[2] Crime prevention numbers for first 5 years include child abuse.

vent over the course of 30 years. The major disadvantage of the prevention approach is clear—there is a time lag between implementation of programs and the appearance of effects. Because of this time lag, programs that are cost-effective in the long run do not appear so in the short run. In addition, long periods between an intervention and the high-risk period of a youth's life offer more opportunity for decay of a program's effects (Greenwood et al., 1998). In the case of early childhood programs, it takes approximately 15 years before significant effects on youth violence can be appreciated, given the peak ages at which young people are involved in violence. Early intervention with delinquent youths that includes day treatment and home monitoring has a shorter lag time because the intervention is introduced later in life yet early in a violent career.

Of the four approaches listed in Table 5–2, the most cost-effective in the long run is parent training, which costs only $392 to implement per serious crime averted after the program has been in effect 30 years. This is less than one-fortieth the estimated cost of preventing serious crime under the three-strikes law. Day treatment and monitoring for delinquent youths are also more cost-effective than mandatory sentencing, costing less than one-sixth as much as the three-strikes approach.

The least cost-effective of the four are prenatal and early childhood intervention and school-based programs that target all students. However, early childhood interventions that include prenatal home visitation and enhanced day care can be expected to halve the incidence of child abuse among high-risk families (that is, low-income families headed by a single mother).[5] Moreover, early childhood intervention may improve educational achievement and reduce teen pregnancy rates. School-based programs have benefits other than prevention of violent crime, including higher educational achievement for all students. In a later analysis, Greenwood et al. (1998) found that school-based prevention programs that targeted disadvantaged youths specifically and included incentives (such as cash) for graduating from high school were almost 10 times as cost-effective as the three-strikes approach.

In general, Greenwood's findings suggest that interventions targeting problem youths—either children who act out or delinquent youths—are more cost-effective than interventions that target general populations of youths. In addition, they confirm that prevention is truly more cost-effective in the long run than incarceration.

Costs aside, prevention may not have as great an effect on rates of violence as imposing longer mandatory sentences on repeat offenders. Other analyses demonstrate that the three-strikes law can reduce serious crime by 21 percent, whereas graduation incentives only reduce it by approximately 15 percent, parent training by 7 percent, early childhood intervention by 5 percent, and delinquent supervision by less than 2 percent (Greenwood et al., 1998). However, the four prevention and intervention strategies combined cost nearly $1.2 billion per year less to implement than the three-strikes strategy alone, and together they could prevent a substantial portion of the 80 percent of serious crimes that are not averted by mandatory sentencing (Greenwood et al., 1998). Graduation incentive programs could pay for themselves with the money they save by averting the eventual incarceration of many youths, and the other prevention and intervention strategies could pay for up to 40 percent of their costs in the same manner.

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[5] These reductions in child abuse were not considered in this analysis.

Studies of two targeted early childhood intervention programs, the Perry Preschool and the Elmira, New York, Prenatal and Infancy Home Visitation by Nurses, indicate that these programs can actually save the government up to three times their cost when delinquency prevention and other benefits are considered (Karoly et al., 1998). It is noteworthy that although the cost-effectiveness data in Table 5–2 were calculated using crime and population statistics for California, they have national implications with respect to the relative costs and benefits of violence prevention and incarceration.

Researchers at the Washington State Institute for Public Policy, who conducted a similar analysis (Aos et al., 1999), point out that the most effective programs are not always the most cost-effective. They note the importance of matching the intervention to the population—a particular challenge for programmers, but one that has a critical effect on both the overall effectiveness and the cost-effectiveness of an intervention.

The results of the Washington study are summarized in Table 5–3. While this table includes only the programs and approaches discussed in this report, the Washington study actually included many more programs and strategies, including some targeting adult offenders. All cost estimates in Table 5-3 were calculated using the same methodology so that programs can be compared. Although most costs are calculated as direct, per-participant program costs, the costs of Multidimensional Treatment Foster Care are calculated relative to regular group home costs, and the costs of intensive supervision programs and boot camps are calculated relative to regular court probation costs. (Thus, the negative program cost of boot camps means that these programs cost less to implement than regular court probation programs.) This overall approach may not be the same one used by other researchers to calculate program costs, resulting in inconsistencies between costs in this table and those projected by individual program designers (Box 5–3).

Nevertheless, the Washington study offers some useful insights into the cost-effectiveness of youth violence prevention. Looking at the benefits to the criminal justice system alone (that is, benefits to the taxpayer), many early interventions and selected strategies come close to paying for themselves with the money they save; others actually achieve benefits that are greater than program costs. The Seattle Social Development Project, for instance, now saves $0.90 from reduced rates of crime for every tax dollar spent. Programs targeting at-risk or delinquent youths can be even more cost-effective. For example, taxpayers today can expect to save $14.07 in future criminal justice costs for every dollar spent on Multidimensional Treatment Foster Care.

The same trend holds when considering the benefits of youth crime prevention to both the criminal justice system and crime victims (personal and property losses)—the largest economic returns are achieved with interventions targeted at juvenile offenders, who are at greatest risk of future offending. The Model programs in this group return $11 to $22 for every dollar invested. However, even programs aimed at nonoffenders can achieve significant cost benefits when future savings to potential crime victims (due to a reduction in the number of victims) and the taxpayer are combined. According to the Washington study, society gains at least $0.50 over program costs for each dollar spent on the Perry Preschool Program, Prenatal and Infancy Home Visitation by Nurses, the Seattle Social Development Project, and Big Brothers Big Sisters of America.

In general, these analyses underestimate the benefits of prevention programs because they fail to consider many of the indirect benefits of preventing serious or violent offenses, such as increased work productivity, increased taxes realized, reduced welfare assistance costs, and reduced victim medical costs.

Table 5-3. Comparative costs and benefits of prevention and intervention

Age	Program	Estimated Cost per Participant ($)	Benefits per Dollar Cost ($)	
			Benefits to the Taxpayer (Criminal Justice System Benefits)	Benefits to the Taxpayer and Victims
Early Childhood	Perry Preschool Program	13,938	0.66	1.50
	Syracuse Family Development Research Program	45,092	0.19	0.34
	Prenatal and Infancy Home Visitation by Nurses	7,403	0.83	1.54
Middle Childhood	Seattle Social Development Project	3,017	0.90	1.79
Adolescent: Non-Juvenile Offender	The Quantum Opportunities Program	18,292	0.09	0.13
	Big Brothers Big Sisters of America	1,009	1.30	2.12
Adolescent: Juvenile Offender	**Community-Based**			
	Multisystemic Therapy	4,540	8.38	13.45
	Functional Family Therapy	2,068	6.85	10.99
	Multidimensional Treatment Foster Care*	1,934	14.07	22.58
	Intensive supervision (probation)**	1,500	0.90	1.49
	Institution-Based			
	Boot camps**	-1,964	0.42	0.26

Source: Washington State Institute for Public Policy, 1999.

* Costs calculated relative to costs of treatment in a regular group home.

** Costs calculated relative to costs of regular probation.

CONCLUSIONS

Clearly, we are past the era in which some observers believed that "nothing works" to prevent youth violence. Numerous programs have demonstrated their effectiveness in reducing risk factors for serious violence. At the same time, there is a pressing need to evaluate more youth violence prevention programs. Of the hundreds of programs currently in use throughout the United States, only six met the criteria for a Model program, and 21 met the criteria for a Promising program. Of the 266 school-based program modules reviewed by Gottfredson et al. (in press), all of which were formally evaluated against a control or comparison group, only 10 percent received the highest score for scientific rigor (the experimental design standard used here). For most violence, crime, and drug prevention programs now being implemented, there is simply no evidence regarding effectiveness. Although well-designed program evaluations are expensive and time-consuming, they are the only way to determine the effectiveness of existing youth violence prevention programs.

Nearly half of the most thoroughly evaluated strategies for preventing youth violence are ineffective, however, and a few are even harmful. It is in society's best interest to evaluate programs before exposing children and adolescents to them—otherwise we run the risk of harming young people rather than helping them.

The most effective youth violence prevention programs are targeted appropriately, address several age-appropriate risk and protective factors in differ-

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Box 5-3. What Model programs cost

Level 1 (Violence Prevention)

Functional Family Therapy

- $1,350–$3,750 per family for 90 days (average 12 visits per family)

Multidimensional Treatment Foster Care

- $2,691 per youth per month for an average of 7 months

Multisystemic Therapy

- $4,500 per youth

Prenatal and Infancy Home Visitation by Nurses

- $3,200 per family per year during the first 3 years of program operation; $2,800 per family per year when the program is fully operational

Seattle Social Development Project

- Not available

Level 2 (Risk Prevention)

Life Skills Training

- $7 per student per year, plus a one-time minimum of $2,000 per day for 1 to 2 days of training

The Midwestern Prevention Project

- $28 per student per year for school and parent programs

Source: Center for the Study and Prevention of Violence, 1998.

ent contexts, and include several program components that have been shown to be effective. This finding is consistent with research showing that youth violence is affected by numerous risk and protective factors that span several environmental contexts (individual, family, school, peer group, community) and several stages of a youth's life (see Chapter 4).

GOING TO SCALE

While identifying best practices in youth violence prevention is critical to reducing the number of young people involved in and affected by violence, it is not the last step. The manner in which a program is implemented can have an enormous impact on its effectiveness—even the best programs are effective only when implemented with high quality and fidelity to the program's design. In other words, using an effective strategy is only part of what is required to achieve effective results. Details of program delivery, including characteristics of the youths receiving the intervention, the setting in which they are treated, and the intensity or duration of the intervention, play important roles in determining effectiveness. Programs must be delivered with design fidelity, to a specific population of youths, within a specific context, and for a specific period of time.

Unfortunately, very little is known about how to preserve a prevention program's positive effects when it is implemented on a wide-scale or national level. What research has been conducted indicates that effective implementation is at least as important to a program's success as the characteristics and content of the program itself (Petersilia, 1990; Lipsey, 1992a, 1992b). Studies of program implementation consistently find that effectiveness depends on the following principles, according to a review by Petersilia (1990, p. 130):

- The project addresses a pressing local problem.
- The project has clearly articulated goals that reflect the needs and desires of the "customer."
- The project has a receptive environment in both the parent organization and the larger system.
- The organization has a leader who is committed to the objectives, values, and implications of the project and who can devise practical strategies to motivate and effect change.
- The project has a director who shares the leader's ideas and values and uses them to guide the implementation process and ongoing operation of the project.

- Practitioners make the project their own rather than being coerced into it; that is, they buy into it, participate in its development, and have incentives to maintain its integrity during the process of change.
- The project has clear lines of authority: There is no ambiguity as to who is in charge.
- The change and its implementation are not complex and sweeping.
- The organization has secure administrators, low staff turnover, and plentiful resources.

Gendreau et al. (1999) organize these same principles into four categories: general organizational factors, program factors, change agent factors, and staffing activities. While they acknowledge the importance of a program's characteristics, such as its theoretical basis, they also stress that positive change and success are dependent on much more than the specific characteristics of a prevention program or intervention. Characteristics of the implementer, the environment in which the program is implemented, and even the target population have a significant influence on overall program effects.

Both the Petersilia and Gendreau et al. studies discuss characteristics of effective implementation within a correctional setting. The Centers for Disease Control and Prevention's (CDC) *Best Practices of Youth Violence Prevention* (Thornton et al., 2000) and a recent review by Gottfredson et al. (2000) suggest that many of the same characteristics help determine the success of violence and delinquency prevention programs. In particular, the CDC study highlights the importance of training, monitoring, and supporting the staff who implement a program on the local level. An appropriate match between staff and the target population can also contribute to program success, particularly in parent- and family-based programs. Staff must be committed to the program, experienced with the general strategy being used, knowledgeable about the target community, and capable of managing group dynamics and overcoming resistance. Likewise, as noted by Petersilia, maintaining community involvement is a key element of program success. Finally, linking a youth violence prevention program to existing strategies and support agencies in the community or school can contribute to success (Thornton et al., 2000).

A similar group of implementation characteristics affects the success of school-based delinquency prevention programs, according to Gottfredson and colleagues (2000). In a study of more than 1,200 schools throughout the United States, they found that extensive, high-quality training and supervision, as well as support for the program from the principal of the school, are key elements of success. Schools also appear to have greater success with standardized materials and methods, as well as programs that can be incorporated into the regular school program. Consistent with Petersilia's principles, local buy-in and initiation of school-based delinquency prevention are important predictors of program success. Multiple sources of information, including the use of an expert to assist with training and implementation, also help to ensure positive results. Improvements in any or all of these factors should improve the quality of the overall prevention program—and its effects on youths.

The CDC recommends monitoring the progress and quality of program implementation on a local level. This step can be particularly important when implementing Model programs. The proven effectiveness of these programs in multiple, long-term studies makes them suitable for implementation on a wide, or even national, scale, but even Model programs are successful only when implemented with fidelity. While it is not always necessary to conduct expensive outcome evaluations of Model programs, given their demonstrated positive effects and ongoing national evaluations, it is critical to monitor the quality of implementation on the local level.

Scientific research has established the effectiveness of a number of prevention programs, and evaluation studies are sure to identify more in the near future. Although the studies cited above offer valuable guidance, more research is needed on how to implement youth violence prevention programs with fidelity on a national scale, how to monitor program fidelity on this scale, and how to increase community and agency capacity for implementing these programs. In addition, large-scale program dissemination will affect the overall benefits of individual youth violence prevention programs. Addressing these issues will require a major investment of time and resources, but it is the essential next step in the continuing effort to find effective solutions to the problem of youth violence.

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APPENDIX 5–A

CONSISTENCY OF BEST PRACTICES EVALUATIONS

Best Practices Category	American Youth Policy Forum[1]	Centers for Disease Control and Prevention[2]	Center for the Study and Prevention of Violence[3]	Developmental Research and Programs[4]	Office of Juvenile Justice and Delinquency Prevention[5,6]	Sherman et al.[7]
Model						
Level 1 (Violence Prevention)						
Functional Family Therapy	✓		✓	✓		
Multidimensional Treatment Foster Care	✓		✓			
Multisystemic Therapy	✓	✓	✓			
Prenatal and Infancy Home Visitation by Nurses		✓	✓	✓	✓	
Seattle Social Development Project	✓		✓	✓	✓	✓
Level 2 (Risk Prevention)						
Life Skills Training			✓	✓		✓
The Midwestern Prevention Project			✓			
Promising						
Level 1 (Violence Prevention)						
Intensive Protective Supervision Project			✓			
Montreal Longitudinal Study/ Preventive Treatment Program			✓	✓	✓	
Perry Preschool Program	✓		✓			
School Transitional Environmental Program (STEP)			✓			
Striving Together to Achieve Rewarding Tomorrows (CASASTART, formerly Children At Risk [CAR])		✓	✓	✓	✓	✓
Syracuse Family Development Research Program	✓		✓		✓	
Level 2 (Risk Prevention)						
Bullying Prevention Program			✓		✓	✓
Families and Schools Together (FAST Track)		✓	✓	✓		
Good Behavior Game	✓		✓	✓	✓	
I Can Problem Solve			✓	✓	✓	
The Incredible Years Series	✓		✓	✓		
Iowa Strengthening Families Program			✓	✓		
Linking the Interests of Families and Teachers (LIFT)			✓			
Parent-Child Interaction Training		✓		✓	✓	
Parent Child Development Center Programs		✓	✓	✓	✓	✓
Preparing for the Drug-Free Years			✓	✓		
Preventive Intervention			✓			
Promoting Alternative Thinking Strategies (PATHS)		✓	✓	✓	✓	✓
The Quantum Opportunities Program	✓		✓	✓		
Yale Child Welfare Project			✓			
Does Not Work						
Drug Abuse Resistance Education (DARE)	✗		✗			✗
Scared Straight						✗

✓ = effective, ✗ = not effective

Sources:

1. Mendel, 2000.
2. Center for the Study and Prevention of Violence, Institute of Behavioral Sciences, University of Colorado, Boulder.
3. Thornton et al., 2000.
4. Developmental Research and Programs, Inc., 2000.
5. Howell, 1995.
6. The 1995 OJJDP report does not include the full complement of the office's recommendations regarding youth violence prevention. Since 1995, the group has released several smaller publications in which it specifically recommends other prevention strategies identified as effective in this report.
7. Sherman et al., 1997.

BEST COPY AVAILABLE

APPENDIX 5–B

DESCRIPTIONS OF SPECIFIC PROGRAMS THAT MEET STANDARDS FOR MODEL AND PROMISING CATEGORIES

MODEL PROGRAMS: LEVEL 1 (VIOLENCE PREVENTION)

Functional Family Therapy (FFT)

- **Contact information:** James F. Alexander, Ph.D.
  University of Utah
  Department of Psychology, SBS 502
  Salt Lake City, UT 84121
  (801) 581-6538
- **Evidence of effectiveness:** In multiple clinical trials, FFT achieved significant reductions in the proportion of youths who reoffended (60 percent of treated youths were arrested after the program versus 93 percent of controls in one study and 11 percent versus 67 percent in another) and the frequency of offending up to 2.5 years after participation in the intervention. Diffusion effects on the siblings of target youths have also been observed, with significantly fewer siblings of FFT youths than control youths having juvenile court records 2.5 to 3.5 years after the program.
- **For further information:**
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works.* Seattle, WA.
  - Alexander, J., Pugh, C., Parsons, B., Barton, C., Gordon, D., Grotpeter, J., Hansson, K., Harrison, R., Mears, S., Mihalic, S., Schulman, S., Waldron, H., & Sexton, T. (1998). Functional family therapy. In D. S. Elliott (Series Ed.), *Blueprints for violence prevention.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Mendel, R. A. (2000). *Less hype, more help: Reducing juvenile crime, what works—and what doesn't.* Washington, DC: American Youth Policy Forum.

Multidimensional Treatment Foster Care

- **Contact information:** Patricia Chamberlain, Ph.D.
  Principal Investigator
  Clinic Director
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  Suite 202
  Eugene, OR 97401
  (541) 485-2711
- **Evidence of effectiveness:** A randomized evaluation of Multidimensional Treatment Foster Care compared to group care in boys only demonstrated the following results at a 12-month follow-up: Treated boys spent significantly more days in their placements, were less likely to run away from their placements, and spent twice as many days living with their families or relatives. One year after leaving treatment, treated boys had significantly larger decreases in arrest rates than controls, had significantly fewer arrests overall, and were significantly more likely not to have been arrested at all during follow-up. Treated boys also reported significantly fewer criminal activities (general delinquency, index offenses, and felony assaults). In prior evalu-

ations that included both boys and girls, Multidimensional Treatment Foster Care improved rates of program completion, reduced rates of incarceration and number of days incarcerated during the first year after treatment, and resulted in a faster drop in rates of problem behavior for seriously impaired youths.

- **For further information:**
    - Chamberlain, P. (1998). *Treatment foster care. Family strengthening series.* (OJJDP Bulletin NCJ 173421). Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
    - Chamberlain, P., & Mihalic, S. F. (1998). Multidimensional treatment foster care. In D. S. Elliott (Series Ed.), *Blueprints for violence prevention.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
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    - Moore, K. J., Sprengelmeyer, P. G., & Chamberlain, P. (in press). Community-based treatment for adjudicated delinquents: The Oregon Social Learning Center's "Monitor" treatment foster care program. *Residential Treatment for Children and Youth.*
    - Mendel, R. A. (2000). *Less hype, more help: Reducing juvenile crime, what works—and what doesn't.* Washington, DC: American Youth Policy Forum.

Multisystemic Therapy (MST)

- **Contact information:** Scott W. Henggeler, Ph.D.
  Director, Family Services
  Research Center
  Medical University of
  South Carolina
  Department of Psychiatry
  and Behavioral Sciences
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  (843) 876-1800
- **Evidence of effectiveness:** This program has been evaluated in multiple, well-designed clinical trials. Studies conducted in Memphis, Tennessee, and South Carolina (among seriously delinquent youths) show that participation in MST can have significant positive effects on behavior problems (including conduct problems, anxiety-withdrawal, immaturity, and socialized aggression), family relations, and self-reported offenses immediately after treatment. Fifty-nine weeks after referral, seriously delinquent youth who participated in MST had slightly more than half as many arrests as controls (mean = 0.87 versus 1.52), spent an average of 73 fewer days incarcerated in justice system facilities, and showed reductions in aggression with peers. After 2.4 years, MST youths were half as likely as control youths to have been rearrested. In Columbia, Missouri, MST improved family relations and arrest rates, including arrests for violent and substance-related crimes, and demonstrated a dose-response effect, with program completers demonstrating significantly more benefits than dropouts.
- **For further information:**
    - Henggeler, S. W., Mihalic, S. F., Rone, L., Thomas, C., & Timmons-Mitchell, J. (1998). Multisystemic therapy. In D. S. Elliott (Series Ed.), *Blueprints for violence prevention.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.

- Thornton, T. N., Craft, C. A., Dahlberg, L. L., Lynch, B. S., & Baer, K. (2000). *Best practices of youth violence prevention: A sourcebook for community action.* Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

Prenatal and Infancy Home Visitation by Nurses

- **Contact information:** David L. Olds, Ph.D.
  Director, Prevention
  Research Center for Family
  and Child Health
  1825 Marion Street
  Denver, CO 80218
  (303) 864-5200
- **Evidence of effectiveness:** Prenatal and Infancy Home Visitation by Nurses has demonstrated effectiveness in both white and African American families in rural and urban settings. A 15-year follow-up of low-income, teenage mothers in whom this intervention was implemented in Elmira, New York, showed a 79 percent reduction in reports of child abuse and neglect, a 31 percent drop in subsequent births, a 44 percent decline in maternal behavioral problems, a 9 percent decline in maternal arrests, a 56 percent decrease in running away by children, and reductions of 56 percent in arrests of children and alcohol consumption by children. The program also increased the average spacing between children by more than 2 years. Preliminary results of a replication in Memphis, Tennessee, demonstrated positive effects on parental caregiving and childhood injuries and reductions in dysfunctional caregiving, including child abuse and neglect. Recent reanalysis of the 15-year follow-up in Elmira showed that the program's effects on child abuse and neglect were significantly diminished in families that reported high rates of domestic violence (more than 28 incidents since the birth of the study child). A new replication of the program in Denver has taken this limitation into account, adding elements on partner communication and assessment and referral for domestic violence. The evaluation of this replication has also been revised to account more accurately for the effects of the program on domestic violence, as well as the effects of domestic violence on the program outcomes (Reuters Health, 9/20/00).
- **For further information:**
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  - Howell, J. A. (Ed.). (1995). *Guide for implementing the comprehensive strategy for serious, violent, and chronic juvenile offenders.* Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
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Seattle Social Development Project

- **Contact information:** J. David Hawkins, Ph.D.
  Social Development
  Research Group
  University of Washington
  School of Social Work
  130 Nickerson, Suite 107
  Seattle, WA 98109
  (206) 286-1805
- **Evidence of effectiveness:** Evaluations of the Seattle Social Development Project demonstrate reductions at the end of grade 2 in aggression, antisocial and externalizing behaviors, and self-destructive behaviors in children who participated in the program during the 1st and 2nd grades. Other benefits of the program include lower rates of alcohol and

delinquency initiation, improvements in family management practices and parent-child relationships, greater attachment and commitment to school, and less involvement with antisocial peers. Follow-up at age 18 shows that the Seattle Social Development Project significantly improves long-term attachment and commitment to school and school achievement and reduces rates of self-reported violent acts and heavy alcohol use. At follow-up, students who received the full intervention were also less likely than controls to be sexually active, to have had multiple sex partners, and to have been or have gotten someone pregnant (this difference was only marginally significant, at $p = .057$). Replications of this program have confirmed its benefits in both general and high-risk populations of youths.

- **For further information:**
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    - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: Seattle Social Development Project.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
    - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works.* Seattle, WA.
    - Hawkins, J. D., Catalano, R. F., Kosterman, R., Abbott, R., & Hill, K. G. (in press). Preventing adolescent health-risk behaviors by strengthening protection during childhood. *Archives of Pediatrics and Adolescent Medicine.*
    - Hawkins, J. D., Catalano, R. F., Morrison, D., O'Donnell, J., Abbott, R., & Day, L. E. (1992). The Seattle Social Development Project: Effects of the first four years on protective factors and problem behaviors. In J. McCord & R.E. Tremblay (Eds.), *Preventing antisocial behavior: Interventions from birth through adolescence.* New York: The Guilford Press.
    - Hawkins, J. D., Doueck, H. J., & Lishner, D. M. (1988). Changing teacher practices in mainstream classrooms to improve bonding and behavior of low achievers. *American Educational Research Journal,* 25, 31–50.
    - Hawkins, J. D., Von Cleve, E., & Catalano, R. F. (1991). Reducing early childhood aggression: Results of a primary prevention program. *Journal of the American Academy of Child and Adolescent Psychiatry,* 30, 208–217.
    - Howell, J. A. (Ed.). (1995). *Guide for implementing the comprehensive strategy for serious, violent, and chronic juvenile offenders.* Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
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    - Sherman, L. W., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P., & Bushway, S. (1997). *Preventing crime: What works, what doesn't, what's promising.* Washington, DC: U.S. Department of Justice, Office of Justice Programs.

MODEL PROGRAMS: LEVEL 2 (RISK PREVENTION)

Life Skills Training (LST)

- **Contact information:** Gilbert Botvin, Ph.D.
  Principal Investigator
  Institute for Prevention Research
  Cornell University Medical College
  411 East 69th Street
  KB-201
  New York, NY 10021
  (212) 746-1270
- **Evidence of effectiveness:** More than a dozen studies have demonstrated the effectiveness of LST. On average, the program reduces tobacco, alcohol, and marijuana use by 50 to 75 percent. Long-term follow-up of students 6 years after participation in the intervention demonstrates that LST also reduces polydrug use by 66 percent, reduces pack-a-day cigarette smoking by 25 percent, and decreases the use of inhalants, narcotics, and hallucinogens.
- **For further information:**
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works.* Seattle, WA.
  - Botvin, G. J., Mihalic, S. F., & Grotpeter, J. K. (1998). Life skills training. In D. S. Elliott (Series Ed.), *Blueprints for violence prevention.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Sherman, L. W., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P., & Bushway, S. (1997). *Preventing crime: What works, what doesn't, what's promising.* Washington, DC: U.S. Department of Justice, Office of Justice Programs.

The Midwestern Prevention Project

- **Contact information:** Mary Ann Pentz, Ph.D.
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  University of Southern California
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  (213) 764-0325
- **Evidence of effectiveness:** Results of the Kansas City study showed that the Midwestern Prevention Project significantly reduces the increase in drug use that occurs in middle school. Specifically, cigarette, alcohol, and marijuana use were 5 percent, 2 percent, and 0 percent lower, respectively, in the Midwestern Prevention Project group at 6 months; 8 percent, 4 percent, and 3 percent lower after 1 year; and 9 percent, 2 percent, and 3 percent lower after 2 years. At 3 years, significant program effects on tobacco and marijuana use, but not alcohol use, remained. Based on early results of this program, a replication in Indianapolis (Project I-STAR) modified the Midwestern Prevention Project intervention by adding two sessions on alcohol use to the school curriculum, introducing a parent-training component a year earlier than in the initial study, adding a pretraining orientation for parent committee members, shortening the time between the various program components, and changing the community organization structure. In the Project I-STAR replication, the effects on cigarette and marijuana use through the high school years were similar to but smaller than the effects demonstrated in Kansas City. The magnitude of effects on inhalant, amphetamine, and LSD use was similar in the two cities. When the quality of implementation was taken into account, the effects of the program in Indianapolis reached the same magnitude as the effects demonstrated in

Kansas City with respect to gateway drug use (tobacco, alcohol, and marijuana).

- **For further information:**
  - Pentz, M. A., Mihalic, S. F., & Grotpeter, J. K. (1998). The midwestern prevention project. In D.S. Elliott (Series Ed.), *Blueprints for violence prevention.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.

PROMISING PROGRAMS: LEVEL 1 (VIOLENCE PREVENTION)

Intensive Protective Supervision Project

- **Contact information:** Kathy Dudley
  Juvenile Services Division
  Administrative Office
  of the Courts
  P.O. Box 2448
  Raleigh, NC 27602
  (919) 662-4738
- **Evidence of effectiveness:** Compared to regular protective supervision, Intensive Protective Supervision reduces referrals to juvenile court for delinquency during treatment and up to 1 year after case closing. One evaluation of a poorly implemented replication in North Carolina (additional sites were added to the original study group) showed a deterioration of program effects over time.
- **For further information:**
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: Intensive Protective Supervision Project.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Land, K. C., McCall, P. L., & Williams, J. R. (1992). Intensive supervision of status offenders: Evidence on continuity of treatment effects for juveniles and a "Hawthorne effect" for counselors. In R. Tremblay & J. McCord (Eds.), *Preventing antisocial behavior: Interventions from birth through adolescence.* New York, NY: The Guilford Press.
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  - Sontheimer, H., & Goodstein, L. (1993). Evaluation of juvenile intensive aftercare probation: Aftercare versus system response effects. *Justice Quarterly,* 10, 197–227.

Montreal Longitudinal Study/Preventive Treatment Program

- **Contact information:** Richard E. Tremblay
  University de Montreal
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  des Sciences
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  3050 Boulevard Eduoard-
  Monpetit
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  (514) 343-6963
- **Evidence of effectiveness:** No significant differences between treated and control boys were observed immediately after treatment, but 2 years later treated youths were involved in fewer fights, were half as likely to have serious school adjustment problems, and were less likely to be involved in delinquent activities than those in the control group. Boys followed to age 12 (3 years after the intervention) had significantly lower rates of delinquency, fighting, serious difficulties in school, and placement in special-education classes, and they were rated as significantly more well adjusted in school than controls. Three years later, treated boys were less likely than untreated boys to report gang involvement, drunkenness, or drug use in the past year, delinquency, and having friends arrested by police. Because the effects of this intervention on girls are unknown, these benefits can be expected only when the intervention is implemented in boys.

- **For further information:**
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: Preventive Treatment Program.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Coiorado at Boulder.
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works.* Seattle, WA.
  - Greenberg, M. T., Domitrovich, C., & Bumbarger, B. (1991). *Preventing mental disorders in school-age children: A review of the effectiveness of prevention programs.* University Park, PA: Prevention Research Center for the Promotion of Human Development, Pennsylvania State University.
  - Howell, J. A. (Ed.). (1995). *Guide for implementing the comprehensive strategy for serious, violent, and chronic juvenile offenders.* Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
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  - Tremblay, R. E., Vitaro, F., Bertrand, L., LeBlanc, M., Beauchesne, H., Boileau, H., & David, L. (1992). Parent and child training to prevent early onset of delinquency: The Montreal Longitudinal Experimental Study. In J. McCord & R. Tremblay (Eds.), *Preventing antisocial behavior: Interventions from birth through adolescence.* New York: The Guilford Press.

Perry Preschool Program

- **Contact information:** David Weikart, Ph.D.
  High Scope Educational
  Research Foundation
  600 North River Street
  Ypsilanti, MI 48198-0704
  (734) 485-2000
  www.highscope.org/research/RESPER.HTM
- **Evidence of effectiveness:** Follow-up at age 19 of children enrolled in Perry Preschool demonstrates less delinquency and fewer arrests, less involvement in serious fights, less police contact, lower dropout rates, and fewer pregnancies and births. The intervention has also reduced antisocial behavior and misconduct in elementary school and shown positive effects on commitment to school, academic achievement, rates of employment, and job satisfaction at age 15.
- **For further information:**
  - Berrueta-Clement, J. R., Schweinhart, L. J., Barnett, W. S., Epstein, A. S., & Weikart, D. P. (1984). *Changed lives: The effects of the Perry Preschool Program on youths through age 19.* Ypsilanti, MI: The High/Scope Press.
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: Perry Preschool Program.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Epstein, A. S. (1993). *Training for quality: Improving early childhood programs through systematic inservice training.* Ypsilanti, MI: The High/Scope Press.
  - Greenwood, P., Model, K.E., Rydell, C. P., & Chiesa, J. (1996). *Diverting children from a life of crime: Measuring costs and benefits.* Santa Monica, CA: RAND.
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- Weikart, D. P., Bond, J. T., & McNeil, J. T. (1978). *The Ypsilanti Perry Preschool Project: Preschool years and longitudinal results through fourth grade.* Ypsilanti, MI: The High/Scope Press.

School Transitional Environmental Program (STEP)

- **Contact information:** Robert D. Felner, Ph.D.
  University of Rhode Island
  School of Education
  Kingston, RI 02881
  (401) 277-5045
- **Evidence of effectiveness:** Evaluations performed at the end of the 9th grade show that STEP students have fewer school absences, higher grade-point averages, more positive feelings about school, and a better self-concept than controls. In long-term studies, STEP students had lower dropout rates than controls (21 percent versus 43 percent), higher grades, and fewer absences. In a replication of the program in middle and junior high schools, both STEP and control students showed increases in substance use, delinquent acts, and depression, and decreases in academic performance and self-confidence. However, these changes were significantly smaller among STEP students than controls. Students who participated in STEP also had lower dropout rates than controls. Replication in students with lower risk profiles 1 year after participation in STEP confirmed these findings, showing lower rates of delinquency and higher self-esteem, academic performance, and school attendance than controls. This program has not been evaluated in small or high-achieving schools. In past studies, the program has worked best in large schools. The major limitation to the evaluation research on this program is that the first study lacked pretest measures; however, the researchers reported no differences between treated students and controls with respect to attendance and grades at baseline.
- **For further information:**
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: School Transitional Environmental Program.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works.* Seattle, WA.
  - Felner, R. D., & Adan, A. M. (1988). The School Transitional Environment Project: An ecological intervention and evaluation. In H. H. Price, E. L. Cowen, R. P. Lorin, & J. Ramos-McKay (Eds.), *14 ounces of prevention: A casebook for practitioners.* Washington, DC: American Psychological Association.
  - Felner, R. D., Ginter, M., & Primavera, J. (1982). Primary prevention during school transitions: Social support and environmental structure. *American Journal of Community Psychology*, 10, 277–290.
  - Felner, R. D., Brand, S., Adan, A. M., Mulhall, P. F., Flowers, N., Satrain, B., & DuBois, D. L. (1993). Restructuring the ecology of the school as an approach to prevention during school transitions: Longitudinal follow-ups and extensions of the School Transitional Environment Project (STEP). In L. A. Jason, K. E. Danner, & Kurasaki, K. S. (Eds.), *Prevention and school transitions.* New York: The Haworth Press.
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Striving Together to Achieve Rewarding Tomorrows (CASASTART, formerly Children At Risk [CAR])

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  Washington, DC 20037
  (202) 261-5709
- **Evidence of effectiveness:** Evaluations of CASASTART have demonstrated significant positive effects on drug use, including gateway drug use, immediately following participation and on violent crime and drug selling 1 year later. Compared to controls and comparison youths, youths who participated in CASASTART also reported significantly less lifetime drug sales and less involvement with delinquent peers. While the initial evaluation of this intervention included multiple, ethnically diverse sites, a true replication of this program has not been evaluated.
- **For further information:**
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: CASASTART.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Harrell, A. V., Cavanagh, S., & Sridharan, S. (1998). *Impact of the Children at Risk Program: Comprehensive final report II.* Washington, DC: The Urban Institute.
  - Thornton, T. N., Craft, C. A., Dahlberg, L. L., Lynch, B. S., & Baer, K. (2000). *Best practices of youth violence prevention: A sourcebook for community action.* Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

Syracuse Family Development Research Program

- **Contact information:** J. Ronald Lally, Program Director
  Peter L. Mangione, Senior Research Scientist
  Center for Child and Family Studies
  Far West Laboratory for Educational Research and Development

  Alice S. Honig
  Syracuse University
  201 Slocum Hall
  Syracuse University
  Syracuse, NY 13244
  (315) 443-4296
- **Evidence of effectiveness:** The most dramatic effects of the program were demonstrated in a 10-year follow-up evaluation that showed reduced juvenile delinquency and improved school functioning. Children in the program also demonstrated more positive self-ratings, higher educational goals, and increased self-efficacy. Benefits to parents included greater encouragement of their children's success and increased family unity. The existing evaluation research on this program is limited by several factors: The program has not been replicated; there was relatively high attrition of families in the initial studies that may have led to a positive bias in the follow-up results; and allocation to treatment and control groups was not randomized. This program is no longer deliverable—that is, no technical assistance is available to those who wish to implement it.
- **For further information:**
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: Syracuse Family Development Research Program.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Howell, J. A. (Ed.). (1995). *Guide for implementing the comprehensive strategy for serious, violent, and chronic juvenile offenders.* Washington, DC: U.S. Department of Justice,

Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

- Lally, J. R., Mangione, P. L., Honig, A. S., & Wittner, D. S. (1988). The Syracuse University Family Development Research Program: Long-range impact on early intervention with low-income children and their families. In D. R. Powell & I. E. Sigel (Eds.), *Parent education as early childhood intervention: Emerging directions in theory, research and practice. Annual Advances in Applied Developmental Psychology, Volume 3.* Norwood, NJ: Ablex Publishing.
- Mendel, R. A. (2000). *Less hype, more help: Reducing juvenile crime, what works—and what doesn't.* Washington, DC: American Youth Policy Forum.

PROMISING PROGRAMS: LEVEL 2 (RISK PREVENTION)

Bullying Prevention Program

- **Contact information:** Dan Olweus, Ph.D.
  Principal Investigator
  University of Bergen
  Research Center for Health Promotion
  Christiesgt. 13, N-5015
  Bergen, Norway
  47-55-58-23-27
- **Evidence of effectiveness:** Initial evaluations of the Bullying Prevention Program were conducted in elementary and junior high school students in Bergen, Norway. Two years after the intervention, bully-victim problems in treated schools decreased by 50 percent. Antisocial behavior, including theft, vandalism, and truancy, also dropped during these years, while school climate improved. These changes showed a dose-response relationship. Multiple replications of this program have demonstrated similar effects in England, Germany, and the United States.
- **For further information:**
  - Olweus, D., Limber, S., & Mihalic, S. (1998). Bullying prevention program. In D. S. Elliott (Series Ed.), *Blueprints for violence prevention.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Howell, J. A. (Ed.) (1995). *Guide for implementing the comprehensive strategy for serious, violent, and chronic juvenile offenders.* Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
  - Sherman, L. W., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P., & Bushway, S. (1997, February). *Preventing crime: What works, what doesn't, what's promising.* Washington, DC: U.S. Department of Justice, Office of Justice Programs.

Families and Schools Together (FAST Track)

- **Contact information:** The Conduct Problems Prevention Group

  Karen Bierman
  Pennsylvania State University

  John Coie
  Duke University

  Kenneth Dodge
  Vanderbilt University

  Mark Greenberg
  University of Washington
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  (814) 863-0112

  John Lochman
  Duke University

  Robert McMahon
  University of Washington
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  University Park, PA 16802–6504
  (814) 863-0112

- **Evidence of effectiveness:** FAST Track has demonstrated effectiveness in students of diverse demographic backgrounds, including sex, ethnicity, social class, and family composition. Short-term follow-up at the end of grade 1 shows improvements in children's aggressive, disruptive, and oppositional behavior; peer ratings; parenting techniques; parent-child bonding; and maternal involvement in school activities. Long-term follow-up studies are in progress, but data are not yet available.

- **For further information:**
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: FAST Track.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Conduct Problems Prevention Group (Bierman, K., Coie, J., Dodge, K., Greenberg, M., Lochman, J., & McMahon, R.). (1992). A developmental and clinical model for the prevention of conduct disorder: The FAST Track Program. *Development and Psychopathology,* 4, 509–527.
  - Conduct Problems Prevention Group (Bierman, K., Coie, J., Dodge, K., Greenberg, M., Lochman, J., & McMahon, R.). (1996, May). *Abstract: An initial evaluation of the FAST Track Program.* Proceedings of the Fifth National Prevention Conference, Tysons Corner, VA.
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works.* Seattle, WA.
  - Thornton, T. N., Craft, C. A., Dahlberg, L. L., Lynch, B. S., & Baer, K. (2000). *Best practices of youth violence prevention: A sourcebook for community action.* Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

Good Behavior Game

- **Contact information:** Sheppard G. Kellam
  The Prevention Program
  Mason F. Lord Building
  Suite 500
  5200 Eastern Avenue
  Baltimore, MD 21224
  (410) 550-3445
- **Evidence of effectiveness:** This intervention has shown positive effects in teacher reports of aggressive and shy behaviors in 1st-grade students. Long-term follow-up evaluations of the Good Behavior Game show sustained decreases in aggression among boys rated most aggressive in grade 1. Program effects on violence or delinquency have not been measured.
- **For more information:**
  - Barrish, H. H., Saunder, M., & Montrose, M. W. (1969). Good behavior game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis,* 2, 119–124.
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: Baltimore Mastery Learning and Good Behavior Game Interventions.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works.* Seattle, WA.
  - Dolan, L., Turkan, J., Wethamer-Larsson, L., & Kellam, S. (1989). *The good behavior game manual.* Baltimore, MD: The Prevention Program. (Also available on the Internet, at www.bpp.jhu.edu)
  - Howell, J. A. (Ed.). (1995). *Guide for implementing the comprehensive strategy for serious, violent, and chronic juvenile offenders.* Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

- Kellam, S. G., Rebok, G. W., Ialongo, N., & Mayer, L. S. (1994). The course and malleability of aggressive behavior from early first grade into middle school: Results of a developmental epidemiologically based preventive trial. *Journal of Child Psychology and Psychiatry*, 35, 259–282.
- Kellam, S. G., & Rebok, B. W. (1992). Building developmental and etiological theory through epidemiologically based prevention intervention trials. In J. McCord & R. E. Tremblay (Eds.), *Preventing antisocial behavior: Interventions from birth through adolescence*. New York: The Guilford Press.
- Medland, M. B., & Stachnik, T. J. (1972). Good-behavior game: A replication and systematic analysis. *Journal of Applied Behavior Analysis*, 5, 45–51.
- Mendel, R. A. (2000). *Less hype, more help: Reducing juvenile crime, what works—and what doesn't*. Washington, DC: American Youth Policy Forum.

I Can Problem Solve

- **Contact information:** Myrna B. Shure
  MCP-Hahnemann University
  Clinical and Health
  Psychology Department
  Broad and Vine Streets,
  MS 626
  Philadelphia, PA 19102-1192
  (215) 762-7205
- **Evidence of effectiveness:** In nursery school and kindergarten students, I Can Problem Solve significantly reduced impulsive and inhibited classroom behavior and improved problem-solving skills at posttest and 1 year. A second study demonstrated sustained improvements in classroom behavior and problem solving 3 to 4 years after the end of the program. In 5th- and 6th-graders, the program increased the use of positive and prosocial behaviors and improved peer relationships and problem-solving skills. In general, it appears that the program is more effective in high-risk students than in students from the general population. Prior studies of this intervention did not use a randomized study design and were limited by high attrition.
- **For further information:**
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: I Can Problem Solve (ICPS)*. Boulder, CO: Center for the Study and Prevention of Violence, Institute for Behavioral Science, University of Colorado at Boulder.
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works*. Seattle, WA.
  - Howell, J. A. (Ed.). (1995). *Guide for implementing the comprehensive strategy for serious, violent, and chronic juvenile offenders*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
  - Shure, M. B. (1993). *Interpersonal problem solving and prevention: A five year longitudinal study—kindergarten through grade 4*. Final Report #MH-40801. Washington, DC: National Institute of Mental Health.
  - Shure, M. B., & Spivack, G. (1979). Interpersonal problem solving thinking and adjustment in the mother-child dyad. In M. W. Kent & R. E. Rolf (Eds.), *Primary prevention of psychopathology, Volume 3: Social competence in children*. Hanover, NH: University Press of New England.
  - Shure, M. B., & Spivack, G. (1980). Interpersonal problem solving as a mediator of behavioral adjustment in preschool and kindergarten children. *Journal of Applied Developmental Psychology*, 1, 29–44.
  - Shure, M. B., & Spivack, G. (1982). Interpersonal problem-solving in young children: A cognitive approach to prevention. *American Journal of Community Psychology*, 10, 341–355.

- Shure, M. B., & Spivack, G. (1988). Interpersonal cognitive problem solving. In R. H. Price, E. L. Cowen, R. P. Lorion, & J. R. McKay (Eds.), *14 ounces of prevention*. Washington, DC: American Psychological Association.
- Shure, M. B., & Healey, K. N. (1993). Interpersonal problem solving and prevention in urban school children. Paper presented at the American Psychological Association Annual Convention, Toronto.

The Incredible Years Series

- **Contact information:** Carolyn Webster-Stratton, Ph.D.
  Parenting Clinic
  School of Nursing
  University of Washington
  Seattle, WA 98195
  (206) 285-7565
  www.incredibleyears.com
- **Evidence of effectiveness:** In a series of six randomized trials, the parent program reduced conduct problems and improved parent-child relationships. In two randomized studies, the teacher program reduced peer aggression in the classroom, increased positive interactions with teachers and peers, and enhanced school readiness. Two randomized studies of the child program demonstrated reductions in conduct problems at home and school and improvements in problem solving with peers. Program effects have been shown to persist for at least one year after treatment.
- **For further information:**
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works*. Seattle, WA.
  - Mendel, R. A. (2000). *Less hype, more help: Reducing juvenile crime, what works—and what doesn't*. Washington, DC: American Youth Policy Forum.
  - Webster-Stratton, C., & Reid, M. J. (1999). Treating children with early-onset conduct problems: The importance of teacher training. Paper presented at the Association for the Advancement of Behavior Therapy, Toronto, Canada.
  - Webster-Stratton, C., & Reid, J. J. (1999). Effects of teacher training in Head Start classrooms: Results of a randomized controlled evaluation. Paper presented at the Society for Prevention Research, New Orleans.
  - Webster-Stratton, C. (1999). *How to promote social and emotional competence in young children*. London, United Kingdom: Sage Publishers.
  - Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: Strengthening parent competencies. *Journal of Consulting and Clinical Psychology*, 66, 715–730.
  - Webster-Stratton, C. (1994). Advancing videotape parent training: A comparison study. *Journal of Consulting and Clinical Psychology*, 62, 583–593.
  - Webster-Stratton, C. (1990). Enhancing the effectiveness of self-administered videotape parent training for families with conduct-problem children. *Journal of Abnormal Child Psychology*, 18, 479–492.
  - Webster-Stratton, C. (1990). Long-term follow-up of families with young conduct-problem children: From preschool to grade school. *Journal of Clinical Child Psychology*, 19, 144–149.
  - Webster-Stratton, C. (1984). Randomized trial of two parent-training programs for families with conduct-disordered children. *Journal of Counseling and Clinical Psychology*, 52, 666–678.
  - Webster-Stratton, C., & Hammond, M. (1997). Treating children with early-onset conduct problems: A comparison of child and parent training interventions. *Journal of Consulting and Clinical Psychology*, 65, 93–109.

- Webster-Stratton, C., Kolpacoff, M., & Hollinsworth, T. (1989). The long-term effectiveness and clinical significance of three cost-effective training programs for families with conduct-problem children. *Journal of Consulting and Clinical Psychology*, 57, 550–553.
- Webster-Stratton, C., Kolpacoff, M., & Hollinsworth, T. (1988). Self-administered videotape therapy for families with conduct-problem children: Comparison of two cost-effective treatments and a control group. *Journal of Consulting and Clinical Psychology*, 56, 558–566.
- Webster-Stratton, C., Mihalic, S., Fagan, A. Arnold, D., Taylor, T., & Tingley, C. (in press). The incredible years series. In D. S. Elliott (Series Ed.), *Blueprints for violence prevention*. Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.

Iowa Strengthening Families Program

- **Contact information:** Richard Spoth
  Social and Behavioral
  Research Center for
  Rural Health
  ISU Research Park
  Building 2, Suite 500
  2625 North Loop Drive
  Iowa State University
  Ames, IA 50010
  (515) 294-4518
  www.exnet.iastate.edu
- **Evidence of effectiveness:** Evaluations of this program revealed program-related reductions in alcohol initiation of 30 to 60 percent 2 years after the intervention and lower rates of tobacco, alcohol, and marijuana use and drunkenness after 4 years. Short-term evaluations also demonstrate improvements in parenting practices, parent-child communication, and family bonding.
- **For further information:**
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: Iowa Strengthening Families Program*. Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works*. Seattle, WA.
  - Spoth, R., Redmond, C., & Shin, C. (1998). Direct and indirect latent-variable parenting outcomes of two universal family-focused preventive interventions: Extending a public health-oriented research base. *Journal of Consulting and Clinical Psychology*, 66, 385–399.
  - Spoth, R., Redmond, C., & Lepper, H. (in press). Alcohol initiation outcomes of universal family-focused preventive interventions: One- and two-year follow-ups of a controlled study. *Journal of Studies on Alcohol*.
  - Spoth, R., Reyes, M., Redmond, C., & Shin, C. (1998). *Assessing a public health approach to delay onset and progression of adolescent substance use: Latent transition and loglinear analyses of longitudinal family preventive intervention outcomes*. Ames, IA: Social and Behavioral Research Center for Rural Health.
  - Spoth, R. L., Redmond, C., & Shin, C. (1999). Randomized trial of brief family interventions for general populations: Reductions in adolescent substance use four years following baseline. Manuscript under review.

Linking the Interests of Families and Teachers (LIFT)

- **Contact information:** John B. Reid
  Oregon Social Learning Center
  160 East 4th Avenue
  Eugene, OR 97401
  (541) 485-2711
- **Evidence of effectiveness:** In short-term evaluations, LIFT decreased children's physical aggression on the playground (particularly children rated by their teachers as most aggressive at the start of the study), increased children's social skills, and decreased aversive behavior in mothers rated most aversive at baseline, relative to controls. Three years after participation in the program, 1st-grade participants had fewer increases in attention-deficit disorder-related behaviors (inattentiveness, impulsivity, and hyperactivity) than controls. At follow-up, 5th-grade participants had fewer associations with delinquent peers, were less likely to initiate patterned alcohol use, and were significantly less likely than controls to have been arrested.
- **For further information:**
  - Eddy, J. M., Reid, J. B., & Fetrow, R. A. (2000). An elementary-school based prevention program targeting modifiable antecedents of youth delinquency and violence: Linking the Interests of Families and Teachers (LIFT). *Journal of Emotional and Behavioral Disorders*, 8, 165–176.
  - Stoolmiller, M., Eddy, J. M., & Reid, J.B. (2000). Detecting and describing preventative intervention effects in a universal school-based randomized trial targeting delinquent and violent behavior. *Journal of Consulting and Clinical Psychology*, 68, 296–306.
  - Reid, J. B., Eddy, J. M., Fetrow, R. A., & Stoolmiller, M. (1999). Description and immediate impacts of a preventative intervention for conduct problems. *American Journal of Community Psychology*, 24, 483–517.

Parent Child Development Center Programs

- **Contact information:** Dale Johnson-Stone
  Department of Psychology
  University of Houston-University Park
  Houston, TX 77004
  (713) 743-8612
- **Evidence of effectiveness:** Evaluations of this program have demonstrated enhanced school achievement in grades 2 and 3; improved parenting skills at the end of the program, at (the child's) age 4, and in grades 2 and 3; and reduced aggressive behavior by children at ages 4 to 7 and 8 to 11. Unfortunately, the evaluations of these programs conducted to date have been limited by high attrition rates.
- **For further information:**
  - Bridgeman, B., Blumenthal, J.B., & Andrews, S. R. (1981). *Parent child development center: Final evaluation report.* Washington, DC: Department of Health and Human Services, Office of Human Development Services.
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: Parent Child Development Center Programs.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works.* Seattle, WA.
  - Johnson, D. L., & Walder, T. (1987). Primary prevention of behavior problems in Mexican-American children. *American Journal of Community Psychology*, 15, 375–385.
  - Howell, J. A. (Ed.). (1995). *Guide for implementing the comprehensive strategy for serious, violent, and chronic juvenile offenders.* Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

  - Thornton, T. N., Craft, C. A., Dahlberg, L. L., Lynch, B. S., & Baer, K. (2000). *Best practices of youth violence prevention: A sourcebook for community action*. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

Parent-Child Interaction Training

- **Contact information:** Joseph Strayhorn, Ph.D.
  Early Childhood Behavior
  Disorders Clinic
  1 Allegheny Square
  Suite 414
  Pittsburgh, PA 15212
- **Evidence of effectiveness:** This intervention has shown positive effects on early antisocial behaviors and family management practices. In a randomized, 1-year follow-up, children who participated in Parent-Child Interaction Training improved significantly more than controls on teacher ratings of attention deficit, hyperactive, aggressive, and anxious behavior.
- **For further information:**
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works*. Seattle, WA.
  - Howell, J. A. (Ed.). (1995). *Guide for implementing the comprehensive strategy for serious, violent, and chronic juvenile offenders*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
  - Strayhorn, J. M., & Weidman, C. S. (1991). Follow-up of one year after parent-child interaction training: Effects on behavior of preschool children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 30, 138–143.
  - Thornton, T. N., Craft, C. A., Dahlberg, L. L., Lynch, B. S., & Baer, K. (2000). *Best practices of youth violence prevention: A sourcebook for community action*. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

Preparing for the Drug-Free Years

- **Contact information:** J. David Hawkins, Ph.D.
  University of Washington
  Social Development
  Research Group
  9725 3rd Avenue N.E.
  Suite 402
  Seattle, WA 98115
  (206) 685-1997
- **Evidence of effectiveness:** Evaluations of Preparing for the Drug-Free Years have demonstrated significant program-related positive effects on parenting skills, parent-child relationships, mothers' self-efficacy, and children's avoidance of alcohol initiation. Unfortunately, 43 percent of recruited families did not participate in the initial studies of this intervention, raising questions about the representativeness of the results.
- **For further information:**
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: Preparing for the Drug-Free Years*. Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works*. Seattle, WA.
  - Spoth, R., Redmond, C., Shin, C., Lepper, H., Haggerty, K., & Wall, M. (1998). Risk moderation of proximal parent-child outcomes of a universal family-focused preventive intervention: A test of replication. *American Journal of Orthopsychiatry*, 68, 565–579.
  - Spoth, R., Redmond, C., & Shin, C. (1998). Direct and indirect latent parenting outcomes of two universal family-focused preventive inter-

ventions: Extending a public health-oriented research base. *Journal of Consulting and Clinical Psychology*, 66, 385–399.

- Spoth, R., Redmond, C., Hockaday, C., & Yoo, S. (1997). Protective factors and young adolescent tendency to abstain from alcohol use: A model using two waves of intervention study data. *American Journal of Community Psychology*, 24, 749–770.
- Kosterman, R., Hawkins, J. D., Spoth, R., Haggerty, K. P., & Zhu, K. (1997). Effects of preventive parent training intervention on observed family interactions: Proximal outcomes from Preparing for the Drug-Free Years. *Journal of Community Psychology*, 25, 277–292.

Preventive Intervention

- **Contact information:** Brenna H. Bry, Ph.D.
  Graduate School of Applied and Professional Psychology
  Rutgers University, Box 819
  Piscataway, NJ 08854
- **Evidence of effectiveness:** Evaluations of this program demonstrate both short- and long-term effectiveness on violence-related risk factors, including higher grades and attendance at the end of the program; significantly lower drug use, school-related problems, and unemployment after 1 year; significantly fewer students with county court records at 5 years; and lower rates of reported criminal behavior at the 1.5 year follow-up (marginal significance, $p < .075$). Program effects on self-reported criminal behavior did not reach statistical significance, although the treatment and control groups did differ significantly with respect to the proportion of students with a juvenile record.
- **For further information:**
  - Bry, B. H. (1982). Reducing the incidence of adolescent problems through preventive intervention: One- and five-year follow-up. *American Journal of Community Psychology*, 10, 265–276.
  - Bry, B. H., & George, F. E. (1980). The preventive effects of early intervention on the attendance and grades of urban adolescents. *Professional Psychology*, 11, 252–260.
  - Bry, B. H., & George, F. E. (1979). Evaluating and improving prevention programs: A strategy from drug abuse. *Evaluation and Program Planning*, 2, 127–136.
  - Center for the Study and Prevention of Violence. (1999). *CSPV blueprints promising fact sheet: Preventive Intervention.* Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
  - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works.* Seattle, WA.

Promoting Alternative Thinking Strategies (PATHS)

- **Contact information:** Mark T. Greenberg
  Department of Human Development and Family Studies
  College of Health and Human Development
  Pennsylvania State University
  110 Henderson Building South
  University Park, PA 16802-6504
  (814) 863-0112
- **Evidence of effectiveness:** Evaluations of this intervention have demonstrated that PATHS improves self-control, understanding and recognition of emotions, the ability to tolerate frustration, the use of effective conflict-resolution strategies, thinking and planning skills, and conduct problems, such as aggression. In students with special needs, PATHS has also been shown to significantly reduce symptoms of anxiety, depression, and sadness and to reduce conduct problems.

- **For further information:**
    - Greenberg, M. T., Kusche, C., & Mihalic, S. (1998). Promoting alternative thinking strategies (PATHS). In D. S. Elliott (Series Ed.), *Blueprints for violence prevention*. Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
    - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works*. Seattle, WA.
    - Howell, J. A. (Ed.). (1995). *Guide for implementing the comprehensive strategy for serious, violent, and chronic juvenile offenders*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
    - Sherman, L. W., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P., & Bushway, S. (1997). *Preventing crime: What works, what doesn't, what's promising*. Washington, DC: U.S. Department of Justice, Office of Justice Programs.
    - Thornton, T. N., Craft, C. A., Dahlberg, L. L., Lynch, B. S., & Baer, K. (2000). *Best practices of youth violence prevention: A sourcebook for community action*. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

The Quantum Opportunities Program

- **Contact information:** C. Benjamin Lattimore
  Opportunities
  Industrialization Centers
  of America, Inc.
  1415 North Broad Street
  Philadelphia, PA 19122
  (212) 236-4500, ext. 251

  Andrew Hahn
  Brandeis University
  Heller Graduate School
  The Center for Human
  Resources
  Waltham, MA 02254-9110
  (617) 736-3851
- **Evidence of effectiveness:** In a multisite, randomized evaluation, a follow-up through the expected time of graduation showed that treated youths were significantly less likely than controls to be arrested (0.17 versus 0.58 arrests per person), were more likely to graduate (63 versus 42 percent), were more likely to attend postsecondary schools (42 versus 16 percent), were less likely to be dropouts, were more likely to receive an honor or award, were less likely to become teen parents, and were more likely to be involved in community service, be hopeful about the future, and consider their lives a success. Follow-up for 2 years after graduation revealed persistent, positive program effects.
- **For further information:**
    - Lattimore, C. B., Mihalic, S. F., Grotpeter, J. K., & Taggart, R. (1998). The quantum opportunities program. In D. S. Elliott (Series Ed.), *Blueprints for violence prevention*. Boulder, CO: Center for the Study and Prevention of Violence, Institute of Behavioral Science, University of Colorado at Boulder.
    - Developmental Research and Programs, Inc. (2000). *Communities That Care® prevention strategies: A research guide to what works*. Seattle, WA.
    - Hahn, A., Leavitt, T., & Aaron, P. (1994). *Evaluation of the quantum opportunities program (QOP). Did the program work? A report on the post-secondary outcomes and cost-effectiveness of the QOP program* (1989–1993). Waltham, MA: Brandeis University Heller Graduate School Center for Human Resources.

- Mendel, R. A. (2000). *Less hype, more help: Reducing juvenile crime, what works—and what doesn't.* Washington, DC: American Youth Policy Forum.

Yale Child Welfare Project

- **Contact information:** Victoria Seitz
  Yale University
  Department of Psychology
  Box 11a, Yale Station
  New Haven, CT 06520
- **Evidence of effectiveness:** An evaluation conducted 10 years after participation in the program showed that youths enrolled in the Yale Child Welfare Project missed significantly fewer days of school, required significantly fewer remedial and supportive school services, and were rated significantly less negative and more socially well adjusted by their teachers compared to controls. Some program effects on academic achievement showed significant diffusion effects on siblings. However, the sample in this study was small, with only 14 of the original 17 pairs of matched treatment and control youths available for evaluation at follow-up. In addition, this study used a quasi-experimental design. This program is no longer deliverable—that is, no technical assistance is available to those who wish to implement it.
- **For further information:**
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CHAPTER 6

A VISION FOR THE FUTURE

In the late 1990s, people in the United States were stunned by a series of tragic shootings at schools that were planned and carried out by youths. These shocking, widely reported events prompted the preparation of this Surgeon General's report on youth violence. Yet these shootings were not characteristic of youth violence nationally. Moreover, at the time of the shootings, youth violence in the United States appeared to be on a downward trend.

Serious youth violence—that is, physical assault by a child or adolescent that carries a significant risk of injuring or killing another person—began to emerge as a social and public health problem of sizable proportions in the 1980s. Arrests of youths for index crimes (robbery, aggravated assault, rape, and homicide) peaked in 1993 after a decade of climbing rapidly, leading some observers to express doubt that anything could be done to halt the epidemic of youth violence. By 1999, after 6 years of sustained decline nationwide, arrests of youths for robbery, rape, and homicide began to resemble the pre-epidemic arrest rates of 1983. A striking exception to this trend was arrests for aggravated assault, which remained 70 percent above 1983 rates.

While arrest records and victimization reports indicated that youth violence was generally declining, other sources of information presented a different picture. In approaching youth violence as a public health problem, this report has looked beyond arrest and other criminal justice records to several national surveys in which high school–age youths report in confidence on their violent behavior. These self-reports reveal that the propensity for and actual involvement of youths in serious violence have not declined with arrest rates. Rather, they have remained at the peak rates of 1993, a troublesome finding. In January 2001, as this report goes to press, the first indications of a long-awaited downturn in self-reported violent behavior are being countered by signs from the FBI's Uniform Crime Reports database that the decline in arrests of youths for violent crimes has bottomed out and, for some index crimes, has begun to climb again.

Clearly, the dynamics and magnitude of youth violence remain fluid and complex. Nevertheless, research in the past several decades has developed a wealth of information about the causes of youth violence and how to prevent it. Numerous studies have identified and examined specific risk factors for violence—the personal and environmental features of young people's lives that increase the statistical probability of their engaging in violent behaviors. Research also has begun to identify protective factors that appear to buffer the effects of risk factors. While this information has been accumulating, researchers, youth service practitioners, and others have been designing, implementing, and evaluating a variety of programs and strategies to reduce or prevent the occurrence of youth violence. The best of these interventions target populations of young people identified as being particularly at risk of becoming involved in a violent lifestyle.

Many effective intervention programs exist to reduce and prevent youth violence. The United States is well past the point where anyone can claim that "nothing works" to prevent youth violence or to modify the destructive life courses of youths who are either engaged in or appear to be headed for lifestyles characterized by violence. At the same time, however, many purported youth violence prevention programs used today are untested, and some are known to be ineffective or even deleterious to a child or adolescent's healthy, safe development.

The courses of action highlighted below are potential next steps. These are not formal policy recommendations. Instead, they represent a vision for the future built on information we possess today. They are intended for policy makers, service and treatment providers, people affiliated with the juvenile justice system, researchers, and most important, the people of the United States. This vision for the future is presented with the hope that it will engage an expanding number of citizens in the challenge of redressing the problem of youth violence.

CONTINUE TO BUILD THE SCIENCE BASE

Scientific research is an essential underpinning of the public health approach to the problem of youth violence. Years of extensive research have revealed the scope of the problem, and we are beginning to understand how to intervene effectively to reduce and prevent violence. Yet most violence prevention programs used in schools, communities, and the justice system today have not been subjected to systematic scientific evaluation, so their effectiveness—or lack of effectiveness—is unknown. Given evidence that some well-intentioned prevention and intervention programs have proved to be harmful, it is imperative that all programs be scientifically evaluated. Research must also be prepared to address areas of emerging concern. One that has become increasingly clear is the need for studies to investigate intimate violence, or dating violence, among youths to identify patterns that predict continuation of such behaviors into adulthood and to design new types of interventions targeting this form of violent behavior. Another area of concern requiring research is the impact of violent interactive media, such as computer games, on serious violent behavior.

This Surgeon General's report is issued at a time of unprecedented scientific opportunity in numerous disciplines—developmental psychology, sociology, criminology, epidemiology, neuroscience, and many other fields. No single research specialty holds the key to understanding, treating, and preventing violence. Rather, they must work together. One of the greatest challenges to researchers today is finding new ways to use the tools, strategies, and insights from these diverse fields of research to reveal the many factors that may lead a young person toward—or protect a young person from—involvement in violence. A related need is to invest in cross-level research designs that will enable researchers to examine individual, family, and community factors simultaneously.

Research frequently examines questions and issues that crop up in the daily lives of millions of people—the relationship of media depictions of violence to violent behavior is a key example; the impact of strategies to discourage firearm use is another. Such familiarity often increases the likelihood that a person will hold strong opinions regarding the effect of television or popular music, or the presence and use of weapons, on violent behavior. Appropriately designed and conducted research offers a factual basis, rather than opinion, for proposing and debating social policy. It is therefore critical to devise ways of giving people with diverse interests (including parents, teachers, and others) a voice in identifying urgent research questions and to inform them about the conclusions drawn from research.

ACCELERATE THE DECLINE IN GUN USE BY YOUTHS IN VIOLENT ENCOUNTERS

The carrying and use of guns by youths in violent encounters have declined dramatically since 1993, the peak of the violence epidemic. To accelerate that decline, we must seek to understand more completely the reasons for it. Are youths' decisions not to carry or use guns in violent encounters related to any specific strategies put in place to discourage firearm use, or did the drop in firearm use result from other factors or conditions? Clearly, important questions remain about precisely what has happened in communities nationwide to reduce the frequency with which adolescents carry guns. While some research has addressed these questions (Blumstein & Wallman, 2000), further studies are imperative—data documenting the continuing magnitude of violent behaviors suggest that a return to lethal violence is likely if adolescents once again carry and use guns in violent encounters.

FACILITATE THE ENTRY OF YOUTHS INTO EFFECTIVE INTERVENTION PROGRAMS RATHER THAN INCARCERATING THEM

In the 1990s, faced with the epidemic of violence and largely unaware that research had found some violence prevention programs to be effective—as well as often buying into the "just desserts" philosophy—the only option some legislators saw was to lock up violent youths to protect society. New evidence makes a compelling case that intervention programs can be cost-effective and can reduce the likelihood that youths will become repeat offenders. Given this evidence, it is in the country's interest to place as many violent youths as possible in these programs, thus correcting the imbalance that now favors use of the criminal justice system over effective intervention programs. Reclaiming youths from a violent lifestyle has clear advantages over warehousing them in prisons and training schools.

Effective programs are not available in many communities. Special efforts must be undertaken to increase awareness of these programs, provide technical assistance and information about them, and devise incentives for states and communities to invest in tested programs. At present, states and communities are squandering substantial amounts of money on untested programs or programs known to be ineffective. Policy makers must be encouraged to focus existing resources on programs that work; evidence of effectiveness might be required, for example, as a condition of receiving Federal or local funding. An informed public is also critical in building support for effective alternatives to incarceration.

DISSEMINATE MODEL PROGRAMS WITH INCENTIVES THAT WILL ENSURE FIDELITY TO ORIGINAL PROGRAM DESIGN WHEN TAKEN TO SCALE

Experience has shown repeatedly that intervention programs shown to be effective in their original sites do not yield uniform outcomes when replicated elsewhere. Upon examination, program evaluators often find that subtle modifications have been introduced into the model program. Lack of a particular category of personnel in a given location, for example, may prompt a program director to substitute professionals or paraprofessionals without proper credentials. Face-to-face training sessions that initially encouraged interaction between a program originator and new staff may be supplanted by videotaped tutorials. The frequency of participants' contacts with a program may be lessened or program duration abbreviated.

Legislators, agency administrators, and program directors should be encouraged to identify incentives for ensuring that the integrity of a model program is not compromised when it is replicated.

PROVIDE TRAINING AND CERTIFICATION PROGRAMS FOR INTERVENTION PERSONNEL

The major challenge in implementing effective intervention programs on a national scale is guaranteeing a well-trained staff that understands the intervention and its limitations. Staff must be adequately trained to deliver a particular intervention in the specific settings for which it was designed. Yet because the supply of appropriately trained individuals who are available to work in the variety of settings in which violence prevention programs operate is limited, operational entropy often sets in. Establishing formal training programs and university certification programs will help ensure the quality of interventions.

IMPROVE PUBLIC AWARENESS OF EFFECTIVE INTERVENTIONS

Identifying specific youth violence interventions as effective in this report will probably stimulate demand for these programs. Youth advocacy organizations have an opportunity to educate citizens on how to interact effectively with their local educational and juvenile justice systems, with appropriate sectors of the elected government, and with private organizations involved in youth violence prevention.

Media campaigns and public service announcements offer a means of increasing public awareness. News or documentary television programs featuring model programs have had a measurable impact both on the funding of the programs and on the volume of requests from sites throughout the country for information about the programs. The 1938 film *Boys Town*, with Spencer Tracy and Mickey Rooney, proved highly beneficial to the reputation and funding opportunities available to Boys Town. Conceivably, featuring model youth violence prevention programs in popular films today could have an equivalent effect.

CONVENE YOUTHS AND FAMILIES, RESEARCHERS, AND PRIVATE AND PUBLIC ORGANIZATIONS FOR A PERIODIC YOUTH VIOLENCE SUMMIT

The move to a public health focus on violence involves new players and new collaborative partnerships among criminologists, psychologists, psychiatrists, sociologists, neuroscientists, and others. Physicians and other general medical service providers have important roles to play, but they are not yet sufficiently involved. Preparation of the Surgeon General's report underscored the risks of disciplinary compartmentalization in the study of youth violence.

There is no common place where information needed by all parties interested in the problem of youth violence can be exchanged. A rich literature on research and services appears in the specialty journals of various disciplines, in professional newsletters, in the mass media, and increasingly on the World Wide Web. Lack of interaction between academic research centers and the community-based agencies responsible for implementing youth violence prevention programs or providing medical services to victims (many of whom are also perpetrators) can result in significant costs.

A periodic, highly visible national summit that receives wide popular as well as specialized media coverage would offer a way of disseminating information on new research findings, effective programs and strategies, best practices, and related information for diverse audiences.

IMPROVE FEDERAL, STATE, AND LOCAL STRATEGIES FOR REPORTING CRIME INFORMATION AND VIOLENT DEATHS

The proportion of law enforcement agencies nationwide that report arrests to the FBI's Uniform Crime Reports (UCR) program has been declining. In 1999, participating agencies represented only 63 percent of the U.S. population. The accuracy of national estimates would be enhanced if this reporting rate were improved. In addition to expanding the participation rate, opportunities for improvement might entail:

- Including arrest rates for *all* racial and ethnic groups. Hispanics in particular are not represented in systematic data collection systems.
- Encouraging law enforcement agencies to participate in the National Incident-Based Reporting System. Developed by the UCR, the incident-based reporting system provides a much richer data set for tracking violent crime than the aggregated data available in the current UCR. Another potentially useful, innovative data set is the National Violent Death Reporting System proposed by the Centers for Disease Control and Prevention. This data set would help in monitoring the magnitude and characteristics of youth violence on a timely basis so that programmatic and policy responses can be more effectively planned and evaluated.
- Develop a standard set of questions for national self-report surveys (such as Monitoring the Future) that include serious violent offenses. Annual data from these surveys should be obtained from all adolescents age 11 through 17, not just high school seniors. At present, variation among surveys in the age of respondents, data obtained, and frequency of data collection severely limit any composite picture that might result. Data collection efforts must make use of the best methodology available and include follow-up questions on each reported violent event to determine weapon use, drug or alcohol involvement at the time of the event, seriousness of injury, victim's relationship to offender, number of youths involved in the attack, and other details. Such data enable researchers to correct for the overreporting in the simple checklist used in most surveys.

CONCLUSION

Youth Violence: A Report of the Surgeon General offers compelling testimony that the safety and well-being of children and adolescents are issues of the utmost importance and urgency to individuals and organizations throughout the United States. The report has drawn on the expertise of countless persons in diverse private organizations; in local, state, and Federal government agencies; in schools; and most important, in families—all of whom are dedicating immense energy and caring to countering the most common threat to the lives of young Americans. Thanks to these efforts and to the insights and actions of young people themselves, it is clear today that youth violence is not an intractable problem; rather, it is a behavior that we can understand, treat, and prevent. This final chapter has offered courses of action intended to help inform the decisions that we must make as we strive to ensure that every child has the opportunity to grow and mature safely, healthily, and happily.

REFERENCE

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GLOSSARY

Absolute deterrent effects. Effects that are demonstrated when an intervention produces better outcomes compared to no treatment.

Age of onset (of serious violence). The age at which an individual reports his or her first act of serious violence.

Age-specific prevalence. The proportion of youths at any given age who report having committed at least one serious violent act in the past year.

Aggravated assault. An unlawful attack by one person upon another wherein the offender uses a weapon or displays it in a threatening manner, or the victim suffers obvious severe or aggravated bodily injury involving apparent broken bones, loss of teeth, possible internal injury, severe laceration, or loss of consciousness. Along with homicide, robbery, and rape, one of the four violent crimes covered in this report.*

Aggression (aggressive behavior). Behavior, physical or verbal, that is intended to harm another person.

Antisocial attitudes. Favorable attitudes toward violence, dishonesty, and rule breaking with hostility toward authority.

Antisocial behaviors. Problem behaviors that range from relatively minor acts such as lying, stealing, truancy, disobedience, and temper tantrums to serious nonviolent or violent behavior such as burglary or aggravated assault.

Attention-deficit/hyperactivity disorder (ADHD). A cognitive disorder characterized by restlessness, excessive activity, and difficulty paying attention.

Career length. Variously defined as the number of years of active offending; or the maximum number of consecutive years of offending; or the span between the first and last year during which a youth meets the criteria for a serious violent offender.

Case study research. A type of study design involving multiple observations of a single individual over time.

Chronic offenders. Variously defined by some minimum number of offenses; for example, youths with three or more serious violent offenses per year.

Contagion effect (of violence). Unproved notion that seeing or hearing about violence in news coverage encourages violent or aggressive behavior.

Control group. A group that receives standard care or no intervention in a research study, compared to the experimental, treatment, or intervention group.

Co-occurrence (of problem behaviors). The simultaneous display of violence and other problem behaviors (e.g., substance use, property crimes, gun ownership). Although these behaviors occur together, it cannot be assumed that one behavior causes another.

Conduct disorder. Childhood disorder marked by persistent acts of aggressive or antisocial behavior.

Cross-sectional research. A type of study design, frequently used in public opinion polls, surveys, and epidemiological research. It involves a single contact with participants for data collection at a given point in time and thus does not permit researchers to estimate individual-level change, development, or predictive effects of a given risk or protective factor on later violent behavior.

Cumulative prevalence (lifetime prevalence or ever-prevalence). The proportion of youths at any particular age who have ever committed a serious violent offense.

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* Definitions of the four violent crimes considered in this report are provided by the U.S. Department of Justice, Federal Bureau of Investigation, 2000.

Delinquent (antisocial) lifestyle. A pattern of consciously chosen and sustained behaviors that include antisocial or illegal acts, typically involving property crimes, substance use, gun ownership, and promiscuity.

Deterrent effects (absolute). See **Absolute deterrent effects.**

Deterrent effects (marginal). See **Marginal deterrent effects.**

Developmental perspective (on youth violence). An approach to understanding youth violence that considers the complex interaction of individuals with their environment at particular times in their lives; this approach recognizes that patterns of behavior change over the life course.

Developmental trajectory (course, pathway, or progression) of violent behavior. The distinct pattern of violent behavior that emerges for an individual over time.

Does Not Work program. Prevention programs in this category demonstrate consistent evidence of no effects or harmful effects.

Early-onset trajectory. A pattern of violent behavior that emerges before adolescence, defined in this report as about age 13. In this pathway, problem behaviors in childhood gradually escalate over time to more violent ones, culminating in serious violence before adolescence. This pattern is less prevalent than the late-onset trajectory and is characterized by higher offending rates, greater seriousness of adolescent offenses, and greater persistence of violence from adolescence into adulthood.

Effect size. The predictive power of an individual or general type of risk or protective factor; or the size of the deterrent effect of an intervention compared to no treatment or a standard treatment. The measure used for risk factor effect sizes in this report is a simple correlation between two variables. For program effectiveness, the effect size measure is the average difference (standardized) between the treatment and control group means on the selected recidivism measure.

Effectiveness trials. Research that tests for benefits to participants in a natural or applied setting.

Efficacy trials. Research that tests for benefits to participants in a controlled or experimental setting.

Epidemiology. Study of the factors influencing the incidence, frequency, and distribution of health-related events in the population; identifying appropriate risk and protective factors for prevention and intervention programs.

Experimental research. A type of study design involving comparison of a group that receives an intervention (experimental or treatment group) and a group that receives standard care or no intervention (control group) in which participants are randomly assigned to one of these groups. This study design permits researchers to assess cause-and-effect relationships and can be used to determine intervention effectiveness.

Externalizing symptoms. A behavioral pattern characterized by the acting out of psychological problems.

Hazard rate. The proportion of individuals who initiate a given behavior (e.g., serious violence) at a given age.

Homicide. The willful (nonnegligent) killing of one human being by another; along with robbery, aggravated assault, and rape, one of the four violent crimes covered in this report.*

Iatrogenic. In the context of youth violence, interventions that are harmful or actually increase involvement in violence.

Incident rate. The number of self-reported violent acts within a given-sized population, a measure of the volume of violence; as used in this report, the number of violent acts per 1,000 young people.

Intervention. See **Secondary prevention.**

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* Definitions of the four violent crimes considered in this report are provided by the U.S. Department of Justice, Federal Bureau of Investigation, 2000.

Late-onset trajectory. A pattern of violent behavior that emerges in adolescence, defined in this report as about age 13. This pattern is more prevalent than the early-onset trajectory and is characterized by a shorter period of involvement, lower frequency of offending, and a lower likelihood of continuing into adulthood. Individuals who are characterized by this pattern typically give few external signs in childhood that they will become violent offenders.

Level of control. Efforts to take into account other factors that might influence the data or responses from participants in a research study; contributes to the quality of a given study.

Level of evidence. The strength of the evidence amassed for any scientific fact or conclusion.

Lifestyle. A pattern of consciously chosen, observable behaviors that a person engages in on a consistent and regular basis.

Locally representative (probability) sample. In this report, the term *representative sample* is used to refer to a *probability* sample—a sample that is selected in such a way that its characteristics can be generalized to the population (e.g., city or county) from which it was drawn with a known degree of accuracy. The accuracy of generalizations from probability samples is given in the form of a confidence interval. In this report, 95 percent confidence intervals (CIs) are reported, indicating an upper and lower bound for the population estimate that is accurate at least 95 percent of the time.

Longitudinal research. Used in etiological (causal) and developmental research, a type of study design involving multiple contacts with the same study participants over time; allows researchers to estimate how well a given risk or protective factor predicts later violent behavior for individuals or groups.

Marginal deterrent effects. Effects that are demonstrated when an intervention produces significantly better outcomes compared to another treatment; may underestimate the true effects of the intervention compared to receiving no treatment at all.

Maturation effect. An effect associated with growing older or maturing, it may refer to changes in one's physical or social development. The term refers specifically to a sharp reduction in youth violence observed during the transition to adulthood, usually during the late teen years to age 20.

Mediating-effects analysis. An analysis that permits researchers to determine whether a change in the targeted risk or protective factor accounts for an observed change in violence.

Meta-analysis. A rigorous statistical method of combining the results of several studies to obtain more reliable estimates of the effects of a general type of treatment or intervention; can be used to summarize program evaluation and draw overall conclusions about the strength and consistency of the influence, or effect size, that particular types of programs have on violence.

Model program. A prevention program that meets the highest scientific standard for effectiveness, as evidenced in published evaluations; has a significant, sustained preventive or deterrent effect and has been replicated in different communities or settings. It has been shown to work and can be expected to have a positive result in a wide range of community settings.

Monitoring the Future (MTF). A cross-sectional survey of high school seniors that obtains self-reports about a wide range of social attitudes and behaviors, including drug use and violence. This study has been conducted annually since 1975 by the University of Michigan's Institute for Social Research and is the longest-running national survey of its type. It also has a longitudinal component, following high school seniors into their adult years, but little has been published on the longitudinal data.

National Crime Victimization Survey (NCVS). A national, self-report, household survey conducted by the Bureau of Justice Statistics that provides annual estimates of levels and rates of criminal victimization in the United States. Residents of selected households age 12 and older are interviewed about their victimization experiences, including serious violent assaults, rapes, and robberies and whether they reported these crimes to law enforcement officials.

National Electronic Injury Surveillance System (NEISS). Operated by the U.S. Consumer Product Safety Commission since 1992, the system monitors types of injuries treated in emergency departments, including those related to firearms.

National Television Violence Survey (NTVS). A recent content analysis of television programming examining its portrayal of violence. The study assessed a total of 2,500 hours of television programming during the 1994 through 1997 viewing seasons.

National Youth Survey (NYS). A national, longitudinal study of U.S. youths age 11 to 17 begun in 1976. Study participants have been interviewed nine times, with the last interviews completed in 1993. The study includes both self-reported and official police records. Measures of a wide range of delinquent, violent, and drug-using behaviors, as well as conventional behaviors, are obtained in confidential interviews.

Nationally representative sample. A probability sample of a country, such as the United States or the United Kingdom. A sample drawn in such a way that its characteristics can be generalized to the U.S. population with a known degree of accuracy (confidence interval). See **Locally representative sample.**

Personality disorders. Behavior syndromes characterized by maladaptive personality patterns that result in chronically dysfunctional perceptions, thoughts, and behaviors.

Physical aggressiveness. Relatively nonserious forms of violent behavior, often displayed in early childhood and continued into adolescence, including hitting, biting, kicking, punching, or otherwise intentionally hurting others.

Population-based studies. Studies based on general population samples rather than selected or institutional samples (e.g., prisoners, hospital patients, nursing home residents, expelled students). Findings from these studies apply to general populations, whereas findings from studies of selected or institutional samples apply specifically to persons in these settings or groups.

Post-traumatic stress disorder (PTSD). Disorder in which a stressful experience is traumatic and produces severe, recurring symptoms.

Prevalence rate. As used in this report, the proportion of youths involved in one or more violent behaviors during some specified time interval, for example, the past year, by age 18, or ever.

Primary prevention (true prevention). As defined in this report, strategies and programs that reduce the likelihood that youths will initiate violent behavior compared to youths in a control group; programs designed to target youths who have not yet become involved in violence or encountered specific risk factors for violence; identifies behavioral, environmental, and biological risk factors associated with violence and takes steps to educate individuals and communities about and protect them from these risks.

Probability sample. A sample selected in such a way that its characteristics can be generalized to the population from which it was drawn with a known degree of accuracy. The level of accuracy for proportions, means, and correlations is presented as a 95 percent confidence interval, which contains the true population value 95 percent of the time. See **Locally representative sample.**

Promising program. Prevention programs in this category meet two of the scientific standards for effectiveness; they do not meet all of the rigorous standards of Model programs, but they are recognized and encouraged with the caution that they be carefully evaluated.

Protective factor. As used in this report, personal characteristics or environmental conditions that reduce the potential harmful effect of a risk factor for violent behavior; characteristics that buffer or moderate the effect of risk. Protective factors are grouped into individual, family, school, peer group, and community domains.

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Public health approach. A practical, goal-oriented, and community-based approach to promoting and sustaining health. This approach seeks to identify risk and protective factors, determine when in the life course they typically occur and how they operate, and enable researchers to design preventive programs that are effective in reducing risk and promoting protection.

Quasi-experimental research. A type of study design with experimental and control groups but without random assignment to these groups. Groups are matched on selected characteristics, or differences are controlled in the analysis. The claim of group equivalence or comparability is not as strong with this design as in an experimental design.

Rape (forcible rape). The carnal knowledge of a person, forcibly and/or against that person's will; or not forcibly or against the person's will where the victim is incapable of giving consent because of his or her temporary or permanent mental or physical incapacity (or because of his or her youth). Along with homicide, robbery, and aggravated assault, one of the four violent crimes covered in this report.*

Reliability (of research instruments or measures). The consistency of a measure; the measure yields the same result on different occasions or applications (when no real change has occurred).

Replication. Repeating an intervention or prevention program at multiple sites to determine if the results will be the same; establishes that a program can be effective at other sites when implemented by new teams under different conditions.

Risk factor. In the context of youth violence, personal characteristics or environmental conditions that increase the likelihood that a young person will become violent but that may not actually cause a person to become violent. Risk factors are grouped into individual, family, school, peer group, and community domains. The more risk factors a young person is exposed to, the greater the likelihood that he or she will become violent.

Risk marker. A personal characteristic or environmental condition associated with known risk factors but having no causal relation to violence on its own.

Robbery. The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or putting the victim in fear. Along with homicide, aggravated assault, and rape, one of the four violent crimes covered in this report.*

Sampling. The selection of persons to be studied in a research project.

Schizophrenia-spectrum disorders. Broad category of disorders that includes individuals with symptoms such as serious distortions of reality (including hallucinations and delusions), withdrawal from social interaction, and disorganization and fragmentation of perception, thought, and emotion, for which other plausible explanations could be ruled out.

Secondary prevention. In the context of this report, strategies and programs that reduce the risk of violence among youths who display one or more risk factors for violence (high-risk youths).

Self-directed violence. Self-inflicted injury and suicide; not the focus of this report.

Self-report studies. Research that asks people in confidence to describe their own behavior. In the context of youth violence, surveys that ask young people in confidence about violent acts they have committed or have been victims of during a given period of time.

Serious violent crime (serious violence or index crimes). As defined in this report, aggravated assault, robbery, rape, and homicide.

Serious violent youths. Youths involved in serious violent behavior (crimes). They are typically high-frequency offenders who are involved in both serious and nonserious offenses. These youths account for a major share of all criminal behavior by persons under age 18.

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* Definitions of the four violent crimes considered in this report are provided by the U.S. Department of Justice, Federal Bureau of Investigation, 2000.

Socially disorganized community. A community characterized by high levels of poverty, unemployment, high turnover of residents, and a large proportion of disrupted or single-parent families.

Socioeconomic status. In reference to youths, their parents' education, occupation, and income.

Statistical significance. The level of confidence with which one can conclude that a difference between two or more groups (generally a treatment and control group) is the result of the treatment delivered rather than the selection process or chance. A probability value of .05 is widely accepted as the threshold for statistical significance in the social and behavioral sciences; a probability value below this threshold ($p < .05$) indicates that a difference of this magnitude could happen by chance less than 5 percent of the time.

Superpredators. A new breed of violent youths who commit more frequent and vicious violent crimes, without remorse, than in previous generations. Contrary to a recent myth, there is no evidence that this type of violent youths emerged in the 1990s.

Surveillance. A type of research that establishes the nature of a health problem, describes its incidence and prevalence trends, and monitors its magnitude over time. Public health specialists use this information to determine appropriate prevention and intervention efforts.

Sustained effects. Changes in individual competencies and environmental conditions produced by effective programs that last at least a year beyond treatment or participation in the intervention.

Tertiary prevention. In the context of this report, strategies and programs that prevent further violence or the escalation of violence among youths already involved in violent behavior.

Uniform Crime Reporting (UCR) program. Operated by the FBI since the 1930s, the program monitors arrests made by law enforcement agencies across the United States and compiles annual arrest information.

Validity (of research instruments or measures). The degree to which an instrument tests what it is supposed to test, or a measure assesses what it is supposed to assess.

Wraparound services. An approach that is designed to tailor social services to the individual.

Youth Risk Behavior Survey (YRBS). A national school-based survey conducted biannually by the Centers for Disease Control and Prevention in collaboration with Federal, state, and private-sector partners since 1990. The survey monitors six important health behaviors, including those that may result in violent injuries among both public and private school students in grades 9 to 12. The survey is voluntary, is anonymous, provides for parental consent for minors, and oversamples minorities.

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YOUTH VIOLENCE

A REPORT OF THE SURGEON GENERAL

EXECUTIVE SUMMARY

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U.S. Public Health Service

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Message from Donna E. Shalala

Secretary of Health and Human Services

The first, most enduring responsibility of any society is to ensure the health and well-being of its children. It is a responsibility to which multiple programs of the Department of Health and Human Services are dedicated and an arena in which we can claim many remarkable successes in recent years. From new initiatives in child health insurance and Head Start, to innovative approaches to child care, to the investment in medical research that has ameliorated and even eliminated the threat of many once lethal childhood diseases, we have focused directly and constructively on the needs of millions of children. Through programs designed to enhance the strength and resiliency of families and family members across the life span and through our investments in diverse community resources, we are also helping to enhance the lives and enrich the opportunities of millions more of our children.

Although we can take rightful pride in our accomplishments on behalf of U.S. youths, we can and must do more. The world remains a threatening, often dangerous place for children and youths. And in our country today, the greatest threat to the lives of children and adolescents is not disease or starvation or abandonment, but the terrible reality of violence.

We certainly do not know all of the factors that have contributed to creating what many citizens—young and old alike—view as our culture of violence. It is clear, however, that as widespread as the propensity for and tolerance of violence is throughout our society—and despite efforts that, since 1994, have achieved dramatic declines in official records of violence on the part of young people—every citizen must assume a measure of responsibility for helping to reduce and prevent youth violence. Information is a powerful tool, and this Surgeon General's report is an authoritative source of information.

In directing the Surgeon General to prepare a scholarly report that would summarize what research can tell us about the magnitude, causes, and prevention of youth violence, President Clinton sought a public health perspective on the problem to complement the extraordinary work and achievements in this area that continue to be realized through the efforts of our criminal and juvenile justice systems. Over the past several months, the Department of Health and Human Services has worked with many hundreds of dedicated researchers, analysts, and policy makers whose interests and expertise lie outside the traditional domains of health and human services. What has become clear through our collaboration is that collectively we possess the tools and knowledge needed to throw safety lines to those young Americans who already have been swept up in the currents of violence and to strengthen the protective barriers that exist in the form of family, peers, teachers, and the countless others whose lives are dedicated to the futures of our children.

This Surgeon General's report seeks to focus on action steps that all Americans can take to help address the problem, and continue to build a legacy of health and safety for our young people and the Nation as a whole.

Foreword

The opportunity for three Federal agencies, each with a distinct public health mission, to collaborate in developing the Surgeon General's report on youth violence has been an invigorating and rewarding intellectual challenge. We and our respective staffs were pleased to find that the importance that we collectively assign to the topic of youth violence transcended any impediments to a true, shared effort. Obstacles that one might have anticipated—for example, difficulties in exchanging data and discussing concepts that emanate from many different scientific disciplines—proved to be surmountable. Indeed, many of the differences in perspective and scientific approach that distinguish the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the Substance Abuse and Mental Health Services Administration (SAMHSA), when combined, afforded us a much fuller appreciation of the problem and much firmer grounds for optimism that the problem can be solved than is obvious from within the boundaries, or confines, of a single organization.

The mission of CDC is to promote health and quality of life by preventing and controlling disease, injury, and disability. The NIH, of which the National Institute of Mental Health (NIMH) is one component, is responsible for generating new knowledge that will lead to better health for everyone. SAMHSA is charged with improving the quality and availability of prevention, treatment, and rehabilitation services in order to reduce illness, death, disability, and cost to society resulting from substance abuse and mental illnesses. Common to each of the agencies is an interest in preventing problems before they have a chance to impair the health of individuals, families, communities, or society in its entirety. Toward this end, CDC, NIH/NIMH, and SAMHSA each support major long-term research projects involving nationally representative samples of our Nation's youth. These studies, which are introduced and described in the report that follows, are designed both to monitor the health status of young Americans and to identify factors that can be shown to carry some likelihood of risk for jeopardizing health—information that lends itself to mounting effective interventions.

The designation of youth violence as a public health issue complements the more traditional status of the problem as a criminal justice concern. Here again, it has been satisfying for all of us in the public health sector to reach across professional and disciplinary boundaries to our colleagues in law, criminology, and justice and work to meld data that deepen our understanding of the patterns and nature of violence engaged in by young people throughout our country.

What has emerged with startling clarity from an exhaustive review of the scientific literature and from analyses of key new data sources is that we as a Nation have made laudable progress in gaining an understanding of the magnitude of the problem. We have made great strides in identifying and quantifying factors that, in particular settings or combinations, increase the probability that violence will occur. And we have developed an array of interventions of well-documented effectiveness in helping young people whose lives are already marked by a propensity for violence as well as in preventing others from viewing violence as a solution to needs, wants, or problems.

CDC, NIH/NIMH, and SAMHSA look forward to continuing collaborations, begun during the development of this report, that will extend further the abilities of policy makers, communities, families, and individuals to understand youth violence and how to prevent it.

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Preface

from the Surgeon General
U.S. Public Health Service

The immediate impetus for this Surgeon General's Report on Youth Violence was the Columbine High School tragedy that occurred in Colorado in April 1999, resulting in the deaths of 14 students, including 2 perpetrators, and a teacher. In the aftermath of that shocking event, both the Administration and Congress requested a report summarizing what research has revealed to us about youth violence, its causes, and its prevention.

Our review of the scientific literature supports the main conclusion of this report: that as a Nation, we possess knowledge and have translated that knowledge into programs that are unequivocally effective in preventing much serious youth violence. Lest this conclusion be considered understated or muted, it is important to realize that only a few years ago, substantial numbers of leading experts involved in the study and treatment of youth violence had come to a strikingly different conclusion. Many were convinced then that nothing could be done to stem a tide of serious youth violence that had erupted in the early 1980s. During the decade extending from 1983 to 1993, arrests of youths for serious violent offenses surged by 70 percent; more alarmingly, the number of young people who committed a homicide nearly tripled over the course of that deadly decade. In many quarters, dire predictions about trends in youth violence yielded to resignation; elsewhere, fear and concern prompted well-meaning officials and policy makers to grasp at any proposed solutions, often with little, if any, systematic attention to questions of the efficacy or effectiveness of those approaches.

Fortunately, the past two decades have also been distinguished by the sustained efforts of researchers, legislators, and citizens from all walks of life to understand and address the problem of youth violence. One seminal contribution to these efforts was an initiative taken by one of my predecessors, Surgeon General C. Everett Koop, to address violence as a public health issue; that is, to apply the science of public health to the treatment and prevention of violence. As evident throughout this report, that endorsement was key to encouraging multiple Federal, state, local, and private entities to invest wisely and consistently in research on many facets of youth violence and to translate the knowledge gained into an exciting variety of intervention programs.

Although much remains to be learned, we can be heartened by our accomplishments to date. For one, our careful analyses, together with those conducted by components of the justice system, have demonstrated the pervasiveness of youth violence in our society; no community is immune. In light of that evidence, it has been most encouraging to me to see that the citizens with whom I have interacted in hundreds of communities around the Nation want us to find answers that will help *all* of our youth. There is a powerful consensus that youth violence is, indeed, our Nation's problem, and not merely a problem of the cities, or of the isolated rural regions, or any single segment of our society.

Equally encouraging have been our findings that intervention strategies exist today that can be tailored to the needs of youths at every stage of development, from young childhood to late adolescence. There is no justification for pessimism about reaching young people who already may be involved in serious violence. Another critical bit of information from our analyses of the research literature is that all intervention programs are not equally suited to all children and youths. A strategy that may be effective for one age may be ineffective for older or younger children. Certain hastily adopted and implemented strategies may be ineffective—and even deleterious—for all children and youth.

Understanding that effectiveness varies underscored for us the importance of bridging the gap between science and practice. Only through rigorous research and thorough, repeated evaluations of programs as they operate in the real world will we be assured that we are using our resources wisely.

In presenting this Surgeon General's report, I wish to acknowledge our indebtedness to the many scientists who have persisted in their work in this difficult, often murky area and whose results we have scrutinized and drawn on. We are also immensely grateful to the countless parents, police officers, teachers, juvenile advocates, health and human service workers, and people in every walk of life who recognize the inestimable value of our Nation's youth and the importance of peace, security, and comity in their lives.

David Satcher, M.D., Ph.D.
Surgeon General

EXECUTIVE SUMMARY

YOUTH VIOLENCE: A REPORT OF THE SURGEON GENERAL

Youth violence is a high-visibility, high-priority concern in every sector of U.S. society. No community, whether affluent or poor, urban, suburban, or rural, is immune from its devastating effects. In the decade extending from roughly 1983 to 1993, an epidemic of violent, often lethal behavior broke out in this country, forcing millions of young people and their families to cope with injury, disability, and death (Cook & Laub, 1998). This epidemic left lasting scars on victims, perpetrators, and their families and friends. It also wounded entire communities and, in ways not yet fully understood, the United States as a whole.

Since 1993, when the epidemic peaked, youth violence has declined significantly nationwide, as signaled by downward trends in arrest records, victimization data, and hospital emergency room records. But the problem has not been resolved. Another key indicator of violence—youths' confidential reports about their violent behavior—reveals no change since 1993 in the proportion of young people who have committed physically injurious and potentially lethal acts. Moreover, arrests for aggravated assault have declined only slightly and in 1999 remained nearly 70 percent higher than pre-epidemic levels. In 1999, there were 104,000 arrests of people under age 18 for a serious violent crime—robbery, forcible rape, aggravated assault, or homicide (Snyder, 2000). Of these, 1,400 were for homicides committed by adolescents (Snyder, 2000) and, on occasion, even younger children (Snyder & Sickmund, 1999). But viewing homicide arrests as a barometer of all youth violence is quite misleading, as is judging the success of violence prevention efforts solely on the basis of reductions in homicides.

Arrest records give only a partial picture of youth violence. For every youth arrested in any given year in the late 1990s, at least 10 were engaged in some form of violent behavior that could have seriously injured or killed another person, according to the several national research surveys in which youths report on their own behavior. Thus, despite reductions in the lethality of violence and consequent arrests, the number of adolescents involved in violent behavior remains disconcertingly high, underscoring the urgency of this report.

This is no time for complacency. The epidemic of lethal violence that swept the United States from 1983 to 1993 was fueled in large part by easy access to weapons, notably firearms. If the sizable numbers of youths still involved in violence today begin carrying and using weapons as they did a decade ago, this country may see a resurgence of the lethal violence that characterized the violence epidemic.

To address the troubling presence of violence in the lives of U.S. youths, the Administration and Congress urged the Surgeon General to develop a report on youth violence, with particular focus on the scope of the problem, its causes, and how to prevent it. Surgeon General Dr. David Satcher requested three agencies, all components of the Department of Health and Human Services, to share lead responsibility for preparing the report. The agencies are the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the Substance Abuse and Mental Health Services Administration (SAMHSA).

Under Dr. Satcher's guidance, these agencies established a Planning Board comprising individuals with expertise in diverse disciplines and professions involved in the study, treatment, and prevention of youth violence. The Planning Board also enlisted individuals representing various Federal departments, including particularly the Department of Justice (juvenile crime aspects of youth violence), the Department of Education (school safety issues), and the Department of Labor (the association between youth violence and youth employment, and out-of-school youth). Invaluable assistance was obtained as well from individual citizens who have founded and operate nonprofit organizations designed to meet the needs of troubled and violent youths. Most important, young people themselves accepted invitations to become involved in the effort. All of these persons helped to plan the report and participated in its prepublication reviews.

This report—the first Surgeon General's report on youth violence—is a product of extensive collaboration. It reviews a massive body of research on where, when, and how much youth violence occurs, what causes it, and which of today's many preventive strategies are genuinely effective. Like other reports from the Surgeon General, this report reviews existing knowledge to provide scientifically derived bases for action at all levels of society. Suggesting whether and how the areas of opportunity listed in the final chapter might lend themselves to policy development to reduce youth violence is beyond the report's purview.

REPORT PERSPECTIVES

Focus on Violence by Youths

The research described here focuses on physical assault by a youth that carries a significant risk of injuring or killing another person. It includes a wealth of studies into the many individual, family, school, peer group, and community factors associated with serious violence—aggravated assault, robbery, rape, and homicide—in the second decade of life, when most such violence emerges.[1] Thus, the young people who are the focus of this report are principally children and adolescents from about age 10 through high school. Appropriate interventions during as well as before this period stand a good chance of helping redirect violent young people toward healthy and constructive adult lives. The window of opportunity for effective interventions opens early and rarely, if ever, closes.

The Developmental Perspective

This report views violence from a developmental perspective. To understand why some young people become involved in violence and some do not, it examines how youths' personal characteristics interact over time with the social contexts in which they live. This perspective considers a range of risks over the life course, from prenatal factors to factors influencing whether patterns of violent behavior in adolescence will persist into adulthood. The developmental perspective has enabled scientists to identify two general onset trajectories of violence: one in which violent behaviors emerge before puberty, and one in which they appear after puberty. The early-onset trajectory shows stronger links between childhood factors and persistent, even lifelong involvement in violent behavior. Identifying such pathways to violence can help researchers target interventions to the periods in development where they will be most effective.

The Public Health Approach

This report reflects the responsibilities and spirit of the Surgeon General's public health mission: to protect and improve the Nation's health. The designation of youth violence as a public health concern invites an approach that focuses more on prevention than on rehabilitation. Primary prevention identifies behavioral, environmental, and biological risk factors associated with violence and takes steps to educate individuals and communities about, and protect them from, these risks. Central to this process is the principle that health promotion is best learned, performed, and maintained when it is ingrained in individuals' and communities' daily routines and perceptions of what constitutes good health practices.

The public health perspective provides a framework for research and intervention that draws on the insights and strategies of diverse disciplines. Tapping into a rich, but often fragmented knowledge base about risk factors, prevention, and public education, the public health perspective calls for critically examining and reconciling what are frequently contradictory conclusions about youth violence. Thus, the approach taken in the current report, which blends offender-based research with public health concepts of prevention and intervention, constitutes an effort to bridge the gap between criminology and the social and developmental science approaches on the one hand, and conventional public health approaches on the other.

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[1] Hereafter, the report will refer simply to "violent crime," avoiding repetitious use of the term "serious violent crime."

The public health approach can help reduce the number of injuries and deaths caused by violence just as it reduced the number of traffic fatalities and deaths attributed to tobacco use (CDC, 1999). Broader than the medical model, which is concerned with the diagnosis, treatment, and mechanisms of specific illnesses in individual patients, the public health approach offers a practical, goal-oriented, and community-based strategy for promoting and maintaining health. To identify problems and develop solutions for entire population groups, the public health approach:

- Defines the problem, using surveillance processes designed to gather data that establish the nature of the problem and the trends in its incidence and prevalence;
- Identifies potential causes, through epidemiological analyses that identify risk and protective factors associated with the problem;
- Designs, develops, and evaluates the effectiveness and generalizability of interventions; and
- Disseminates successful models as part of a coordinated effort to educate and reach out to the public (Hamburg, 1998; Mercy et al., 1993).

The chapters in this report are keyed to each of these components of the public health approach.

Myths about Youth Violence

An important reason for making research findings widely available is to challenge false notions and misconceptions about youth violence. Ten myths about violence and violent youth are listed and debunked. Examples of these myths include:

Myth: ***Most future offenders can be identified in early childhood.***

Myth: ***Child abuse and neglect inevitably lead to violent behavior later in life.***

Myth: ***African American and Hispanic youths are more likely to become involved in violence than other racial or ethnic groups.***

Myth: ***A new, violent breed of young superpredators threatens the United States.***

Myth: ***Getting tough with juvenile offenders by trying them in adult criminal courts reduces the likelihood that they will commit more crimes.***

Myth: ***Nothing works with respect to treating or preventing violent behavior.***

Myth: ***Most violent youths will end up being arrested for a violent crime.***

These false ideas are intrinsically dangerous. Assumptions that a problem does not exist or failure to recognize the true nature of a problem can obscure the need for informed policy or for interventions. An example is the conventional wisdom in many circles that the epidemic of youth violence so evident in the early 1990s is over. Alternatively, myths may trigger public fears and lead to inappropriate or misguided policies that result in inefficient or counterproductive use of scarce public resources. An example is the current policy of waiving or transferring young offenders into adult criminal courts and prisons.

MAJOR RESEARCH FINDINGS AND CONCLUSIONS

This report reviews a vast, multidisciplinary, and often controversial research literature. In the process, it seeks to clarify the discrepancies between official records of youth violence and young people's own reports of their violent behaviors. It identifies factors that increase the risk, or statistical probability, that a young person will gravitate toward violence and reviews studies that have begun to identify developmental pathways that may lead a young person into a violent lifestyle. Also explored is a less well developed area of research—the factors that seem to protect youths from the effects of exposure to risk factors for violence. Finally, the report reviews research on the effectiveness of specific strategies to reduce and prevent youth violence.

The most important conclusion of this report is that youth violence is not an intractable problem. We now have the knowledge and tools needed to reduce or even prevent much of the most serious youth violence, with the added benefit of reducing less dangerous, but still serious problem behaviors and promoting healthy development. Scientists from many disciplines, working in a variety of settings with public and private agencies, are generating needed information and putting it to use in designing, testing, and evaluating intervention programs. However, after years of effort and massive expenditures of public and private resources, the search for solutions to the issue of youth violence remains an enormous challenge. Some traditional as well as seemingly innovative approaches to reducing and preventing youth violence have failed to deliver on their promise, and successful approaches are often eclipsed by random violent events such as the school shootings that have occurred in recent years in communities throughout the country. *Thus, the most urgent need is a national resolve to confront the problem of youth violence systematically, using research-based approaches, and to correct damaging myths and stereotypes that interfere with the task at hand.*

More specific major findings and conclusions are summarized below by chapter.

Trends in Youth Violence (Chapter 2)

Two distinctly different, complementary ways of measuring violence are used by scientists—official reports and self-reports. Official arrest data are an obvious means of determining the extent of youth violence, and a surge in arrests for violent crimes marked the epidemic of youth violence between 1983 and 1993. Arrests were driven largely by the rapid proliferation of firearms use by adolescents engaging in violent acts and the likelihood that violent confrontations would—as they did—produce serious or lethal injuries. Today, with fewer young people carrying weapons, including guns, to school and elsewhere, violent encounters are less likely to result in homicide and serious injury and therefore are less likely to draw the attention of police. By 1999, arrest rates for homicide, rape, and robbery had all dropped below 1983 rates. Arrest rates for aggravated assault, however, were nearly 70 percent higher than they were in 1983, having declined only 24 percent from the peak rates in 1994.

Youth violence can also be measured on the basis of confidential reporting by youths themselves. Confidential surveys find that 13 to 15 percent of high school seniors report having committed an act of serious violence in recent years (1993 to 1998). These acts typically do not come to the attention of police, in part because they are less likely than in years past to involve firearms. Over the past two decades, the number of violent acts by high school seniors increased nearly 50 percent, a trend similar to that found in arrests for violent crimes. But neither this incident rate nor the proportion of high school seniors involved in violence has declined in the years since 1993—they remain at peak levels. In the aggregate, the best available evidence from multiple sources indicates that youth violence is an ongoing national problem, albeit one that is largely hidden from public view.

Major Findings and Conclusions

1. The decade between 1983 and 1993 was marked by an epidemic of increasingly lethal violence that was associated with a large rise in the use of firearms and involved primarily African American males. There was a modest rise in the proportion of young persons involved in other forms of serious violence.
2. Since 1994, a decline in homicide arrests has reflected primarily the decline in use of firearms. There is some evidence that the smaller decline in nonfatal serious violence is also attributable to declining firearm use.
3. By 1999, arrest rates for violent crimes—with the exception of aggravated assault—had fallen below 1983 levels. Arrest rates for aggravated assault remain almost 70 percent higher than they were in 1983, and this is the offense most frequently captured in self-reports of violence.

4. Despite the present decline in gun use and in lethal violence, the self-reported proportion of young people involved in nonfatal violence has not dropped from the peak years of the epidemic, nor has the proportion of students injured with a weapon at school declined.

5. The proportion of schools in which gangs are present continued to increase after 1994 and has only recently (1999) declined. However, evidence shows that the number of youths involved with gangs has not declined and remains near the peak levels of 1996.

6. Although arrest statistics cannot readily track firearm use in specific serious crimes other than homicide, firearm use in violent crimes declined among persons of all ages between 1993 and 1997.

7. The steep rise and fall in arrest rates for homicide over the past two decades have been matched by similar, but less dramatic changes in some of the other indicators of violence, including arrest rates for all violent crimes and incident rates from victims' self-reports. This pattern is not matched by arrests for selected offenses, such as aggravated assault, or incident rates and prevalence rates from offenders' self-reports.

8. Young men—particularly those from minority groups—are disproportionately arrested for violent crimes. But self-reports indicate that differences between minority and majority populations and between young men and young women may not be as large as arrest records indicate or conventional wisdom holds. Race/ethnicity, considered in isolation from other life circumstances, sheds little light on a given child's or adolescent's propensity for engaging in violence.

9. Schools nationwide are relatively safe. Compared to homes and neighborhoods, schools have fewer homicides and nonfatal injuries. Youths at greatest risk of being killed in school-associated violence are those from a racial or ethnic minority, senior high schools, and urban school districts.

Pathways to Youth Violence (Chapter 3)

Viewed from a developmental perspective, violence stems from a complex interaction of individuals with their environment at particular times in their lives. Longitudinal research has enabled investigators to describe the emergence of violence in terms of two (and possibly more) life-course trajectories. In the early-onset trajectory, violence begins before puberty, whereas in the late-onset trajectory it begins after puberty, at about age 13. These two trajectories offer insights into the likely course, severity, and duration of violence over the life span and have practical implications for the timing of intervention programs and strategies. Some research has examined the co-occurrence of serious violence and other problems, including drug use and mental disorders, and some has looked at factors associated with the cessation of youth violence or its continuation into adulthood. Both of these areas need—and warrant—more study.

Major Findings and Conclusions

1. There are two general onset trajectories for youth violence—an early one, in which violence begins before puberty, and a late one, in which violence begins in adolescence. Youths who become violent before about age 13 generally commit more crimes, and more serious crimes, for a longer time. These young people exhibit a pattern of escalating violence through childhood, and they sometimes continue their violence into adulthood.

2. Most youth violence begins in adolescence and ends with the transition into adulthood.

3. Most highly aggressive children or children with behavioral disorders do not become serious violent offenders.

4. Surveys consistently find that about 30 to 40 percent of male youths and 15 to 30 percent of female youths report having committed a serious violent offense by age 17.

5. Serious violence is part of a lifestyle that includes drugs, guns, precocious sex, and other risky behaviors. Youths involved in serious violence often commit many other types of crimes and

exhibit other problem behaviors, presenting a serious challenge to intervention efforts. Successful interventions must confront not only the violent behavior of these young people, but also their lifestyles, which are teeming with risk.

6. The differences in patterns of serious violence by age of onset and the relatively constant rates of individual offending have important implications for prevention and intervention programs. Early childhood programs that target at-risk children and families are critical for preventing the onset of a chronic violent career, but programs must also be developed to combat late-onset violence.
7. The importance of late-onset violence prevention is not widely recognized or well understood. Substantial numbers of serious violent offenders emerge in adolescence without warning signs in childhood. A comprehensive community prevention strategy must address both onset patterns and ferret out their causes and risk factors.

Risk and Protective Factors (Chapter 4)

Extensive research in recent decades has sought to identify various personal characteristics and environmental conditions that either place children and adolescents at risk of violent behavior or that seem to protect them from the effects of risk. Risk and protective factors can be found in every area of life. Exerting different effects at different stages of development, they tend to appear in clusters, and they appear to gain strength in numbers. These risk probabilities apply to groups, not to individuals. Although risk factors are not necessarily causes, a central aim of the public health approach to youth violence is to identify these predictors and to determine when in the life course they typically come into play. Armed with such information, researchers are better equipped to design well-timed, effective preventive programs. Identifying and understanding how protective factors operate is potentially as important to preventing and stopping violence as identifying and understanding risk factors. Several protective factors have been proposed, but to date only two have been found to buffer the effects of exposure to specific risks for violence: an intolerant attitude toward deviance, including violence, and commitment to school. Protective factors warrant, and are beginning to receive, more research attention.

Major Findings and Conclusions

1. Risk and protective factors exist in every area of life—individual, family, school, peer group, and community. Individual characteristics interact in complex ways with people and conditions in the environment to produce violent behavior.
2. Risk and protective factors vary in predictive power depending on when in the course of development they occur. As children move from infancy to early adulthood, some risk factors will become more important and others less important. Substance use, for example, is a much stronger risk factor at age 9 than it is at age 14.
3. The strongest risk factors during childhood are involvement in serious but not necessarily violent criminal behavior, substance use, being male, physical aggression, low family socioeconomic status or poverty and antisocial parents—all individual or family attributes or conditions.
4. During adolescence, the influence of family is largely supplanted by peer influences. The strongest risk factors are weak ties to conventional peers, ties to antisocial or delinquent peers, belonging to a gang, and involvement in other criminal acts.
5. Risk factors do not operate in isolation—the more risk factors a child or young person is exposed to, the greater the likelihood that he or she will become violent. Risk factors can be buffered by protective factors, however. An adolescent with an intolerant attitude toward deviance, for example, is unlikely to seek or be sought out by delinquent peers, a strong risk factor for violence at that age.
6. Given the strong evidence that risk factors predict the likelihood of future violence, they are useful for identifying vulnerable populations that may

benefit from intervention efforts. Risk markers such as race or ethnicity are frequently confused with risk factors; risk markers have no causal relation to violence.

7. No single risk factor or combination of factors can predict violence with unerring accuracy. Most young people exposed to a single risk factor will not become involved in violent behavior; similarly, many young people exposed to multiple risks will not become violent. By the same token, protective factors cannot guarantee that a child exposed to risk will not become violent.

Preventing Youth Violence (Chapter 5)

Research clearly demonstrates that prevention programs and strategies can be effective against both early- and late-onset forms of violence in general populations of youths, high-risk youths, and even youths who are already violent or seriously delinquent. Chapter 5 highlights 27 specific youth violence prevention programs that are not only effective at preventing youth violence but cost-effective as well. In a number of cases, the long-term financial benefits of prevention are substantially greater than the costs of the programs. These promising findings indicate that youth violence prevention has an important role to play in overall efforts to provide a safe environment for youths.

Despite these positive findings, current research on youth violence prevention has important limitations. For example, relatively little is known about the scientific effectiveness of hundreds of youth violence programs currently in use in schools and communities in the United States. This situation invites concern because in the past, many well-intentioned youth violence prevention programs were found to have been ineffective or to have had negative effects on youths. Even less is known about the best strategies for implementing effective programs on a national scale without compromising their results.

Major Findings and Conclusions

1. A number of youth violence intervention and prevention programs have demonstrated that they are effective; assertions that "nothing works" are false.
2. Most highly effective programs combine components that address both individual risks and environmental conditions, particularly building individual skills and competencies, parent effectiveness training, improving the social climate of the school, and changes in type and level of involvement in peer groups.
3. Rigorous evaluation of programs is critical. While hundreds of prevention programs are being used in schools and communities throughout the country, little is known about the effects of most of them.
4. At the time this report was prepared, nearly half of the most thoroughly evaluated strategies for preventing violence had been shown to be ineffective—and a few were known to harm participants.
5. In schools, interventions that target change in the social context appear to be more effective, on average, than those that attempt to change individual attitudes, skills, and risk behaviors.
6. Involvement with delinquent peers and gang membership are two of the most powerful predictors of violence, yet few effective interventions have been developed to address these problems.
7. Program effectiveness depends as much on the quality of implementation as on the type of intervention. Many programs are ineffective not because their strategy is misguided, but because the quality of implementation is poor.

A Vision for the Future (Chapter 6)

The most important conclusion of this report is that an array of intervention programs with well-documented effectiveness is now in place to reduce and prevent youth violence. Such programs are the outcome of a large body of research that has examined the paths and trajectories that lead some youths toward lives marred by violence. Multiple studies have identified and examined specific risk factors—personal and environmental features of young people's lives that heighten the statistical probability of their engaging in violent behaviors. Research has also begun to identify protective factors that appear to buffer the effects of exposure to risk. While this information has been accumulating, researchers, youth service practitioners, and others have been actively engaged in designing, implementing, and evaluating a variety of interventions to reduce and prevent the occurrence of youth violence. The best of these interventions target specific populations of young people, as defined by particular constellations of risk and life experience.

Chapter 6 highlights courses of action for the Nation to consider. Given the focus of the report, particular emphasis is placed on consideration of research opportunities and needs. Although effective interventions exist today, only through continued research will all intervention programs be shown to meet a standard of effectiveness—or be discarded. Although the research options and other courses of action suggested here are not formal policy recommendations, they offer a vision that may inform the generation of policies that will build on information we possess today. They are intended for policy makers, service and treatment providers, individuals affiliated with the juvenile justice system, researchers, and, most important, the people of the United States. This vision for the future is presented with the hope that it will engage an expanding number of citizens in the challenge of redressing the problem of youth violence. The following are possible courses of action:

- Continue to build the science base.
- Accelerate the decline in gun use by youths in violent encounters.
- Facilitate the entry of youths into effective intervention programs rather than incarcerating them.
- Disseminate model programs with incentives that will ensure fidelity to original program design when taken to scale.
- Provide training and certification programs for intervention personnel.
- Improve public awareness of effective interventions.
- Convene youths and families, researchers, and private and public organizations for a periodic youth violence summit.
- Improve Federal, state, and local strategies for reporting crime information and violent deaths.

ACKNOWLEDGMENTS

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